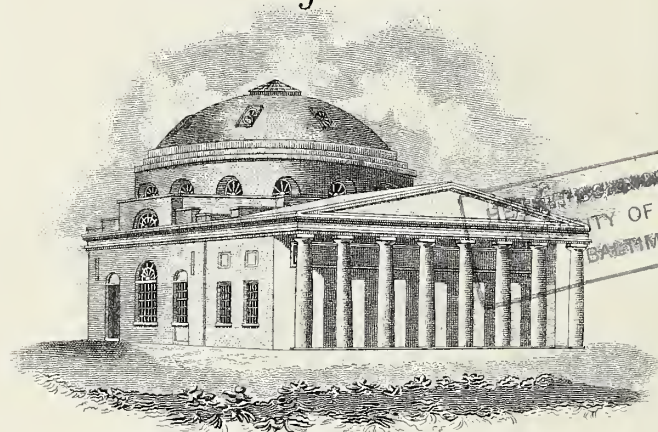
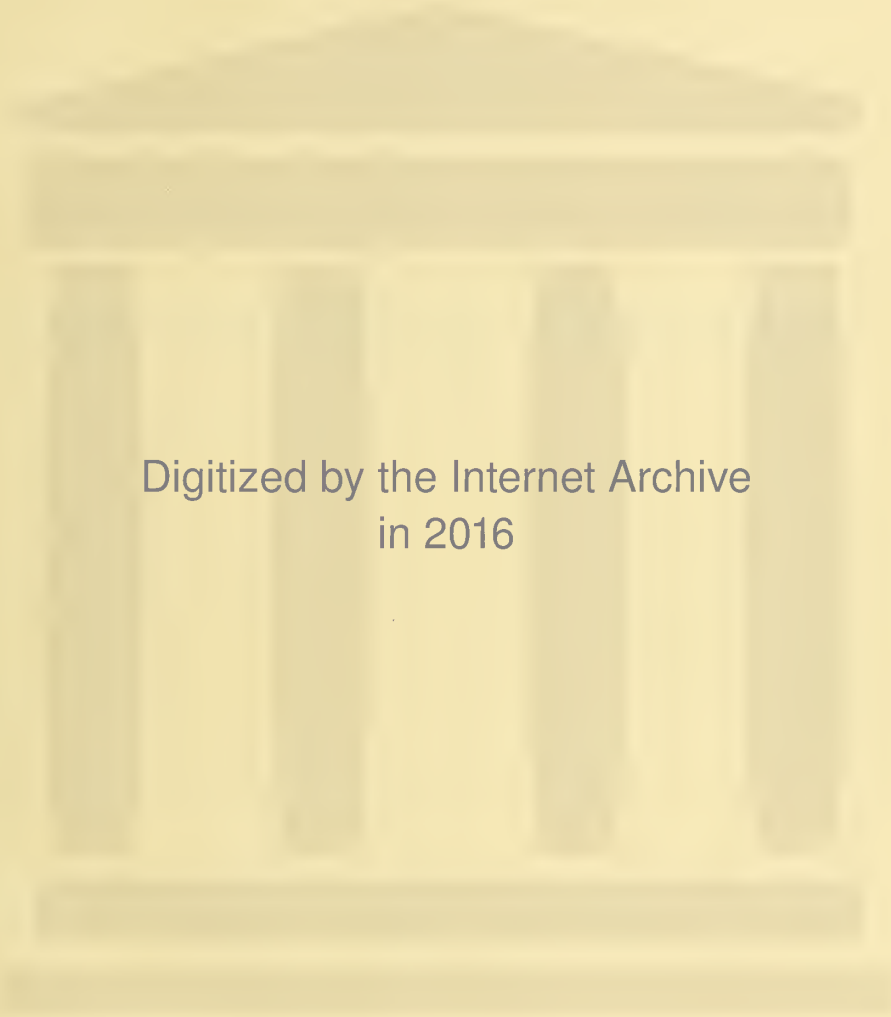


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Volume L

JANUARY, 1949

Number 1

Migraine *

Baldwin L. Keyes, M.D.

Philadelphia, Pennsylvania

At one time migraine was a term used to define a distinct clinical entity. This was described as a violent one-sided headache with some accompaniments in the nature of warnings such as scotoma and terminal effects such as nausea and vomiting. It was felt to be due to dilatation of certain meningeal arteries as a result of localized spasm induced through sympathetic nervous stimulation.^{1, 2, 3}

During the past few years an enormous amount of interest has turned to this subject of migraine, and a much broader concept exists of what may be included under this diagnostic term.^{1, 9}

We now run the risk of becoming diffuse and too inclusive, although it seems reasonable to consider clinical entities based on localized periodic acute vascular dilatation, in any part of the anatomy, as having some common etiological basis.

Migraine seems to follow an hereditary trend through certain families, especially from mother to daughter, whose male or female children may both have migraine, but whose daughters are likely to transmit the tendency further.

There continues to be discussion of the relationship between migraine and epilepsy, and there is this familial pattern in both entities, and terminal capillary patterns are said to bear a close resemblance.^{3, 9} Migrainous families, however, do not have epilepsy any more frequently than normal healthy families, and the encephalogram shows no relationship to epilepsy.¹³

In about 40 per cent of the cases the onset is before puberty with a ratio of females about two and a half to one, over the male in selectivity.¹¹ All sorts of classes are subject to migraine, although it seems more predominant where there is greater nervous tension and stress, such as in city life.

In many instances the migraine tends to grow de-

cidedly less or even to disappear after the climacteric, although there are cases recorded in which it becomes worse after the menopause.¹²

Considerable discussion surrounds the question as to whether or not there is such a thing as a migraine personality.^{13, 48} On the whole there do seem to be, with unusual frequency, certain personality factors present in the migraine patient.^{14, 48} Possibly because of the repeated violence of their attacks and the always impending hazard of repetition, many of these people develop a severe neurosis, with anxiety and tension and self pity and carry the risk of chronic invalidism. These patients are usually intelligent, extremely hypersensitive, exacting, even compulsive, and seem to have fundamentally a lower resistance to distressing events, accepting inconsequential reverses as catastrophies, contradictions as insults and normal stresses as great worries.

In addition to hereditary factors and personality sensitiveness, there is an enormous allergy component in better than 65 per cent of the cases, with histamine reactions common in many.¹⁵ Chronic gastro-intestinal disturbances, anemias, menstrual and endocrinological disorders all appear as predisposing factors. Liver disturbances are now thought to be less significant, although the old name for migraine was "biliary headache." Alcohol and tobacco seem to increase sensitivity. Hypertension is five times more frequent in migraine patients than in other people, although this may be the result rather than the cause of the syndrome.⁵

Many theories have been advanced by various investigators as to the actual etiological factors producing migraine.

Physiologists have studied the possibility of a water and salt retention with resultant cerebral edema,²⁹ possibly induced by an allergy,¹⁷ while hypoglycemia¹⁸ has been considered, along with

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endocrine disorders¹³ and vitamin deficiencies.²⁵ Hemochromatosis has been shown to exist during migraine attacks with an increase in effective arterial blood volume.¹⁹

The possibility of alteration of cerebral spinal fluid flow with increase in sugar and reduction of chlorides has been considered.²⁰

It is thought that only soft elastic arteries can be affected by the pathologic spasm sufficient to produce the dilatation found in migraine.²¹

It has been indicated that the histamine headache involves the cerebral branches of the internal carotid, the basilar and the vertebral arteries, while the migraine headache involves the intracranial and dural branches of the external carotid artery.⁵⁰

The work of Wolf² and his associates showed that during an attack of migraine there was an increase in the amplitude of pulsation of certain branches of the external carotid artery, and further, that with decreased amplitude there was decreased head pain.

Pressure in some instances over the occipital artery or over the temporal artery reduced headache.

The use of ergotamine to produce vasoconstriction reduced the amplitude of pulsation of the involved artery more than 50 per cent, with consequent reduction in dilatation and reduction in headache.

Response to sympathetic nerve stimulation was not perceptibly diminished with ergotamine.

We may reasonably conclude then that the pain in migraine is due to a dilatation of certain cerebral arteries, while relief is brought about by constriction and a reduction of the amplitude of pulsation.

Migraine episodes may be precipitated by distressing emotional crises, anger, anxiety, sorrow, exposure to specific allergies, severe eye strain, and in some instances, harsh noises, sharp loud sounds, jolts, bumps and other mental or physical shocks.⁴⁸

The typical migraine attack is usually preceded by restlessness, irritability, depression, drowsiness or a sense of fullness in the head, and rarely an unusual sensation of well being may precede the paroxysm. In some cases visual manifestations such as photophobia, hemianopsia, teichopsia, recurring flashes of light, moving colored spectrum and other scintillating scotomata, or other evidences of oculogyric crises may arise as an aura of an impending attack. Occasionally such experiences subside without culminating in the usual true migraine head pain. Such cases are referred to as oculogyric or ophthalmic migraine.

Not infrequently there arises flushing or sweating, or numbness or tingling on one side of the face,

or a unilateral congestion of the nasal passages. During an attack other signs of the central disturbances have been noted such as transient aphasia, one sided facial weakness, or hemiparesis on the side opposite the head pain. Occasionally vestibular and labyrinthine manifestations with vertigo may arise.^{4, 6, 8, 3}

At the onset of an attack all premonitory signs become more severe, and almost suddenly give way to a terrific sense of pressure in the head which quickly becomes centralized over one side of the head, usually parietal or occipital, as an acute, violent, boring and continuous pain which is unrelenting, not relieved by change of posture, though made worse by efforts to rise. During a severe attack, the patient is completely overwhelmed, appears as though in shock and may develop violent nausea, vomiting, even of a projectile or cerebral type.⁴⁸

A migraine attack may last for a few hours to a few days when it is known as a migraine status, and it may occur at intervals of several days to several months.

Migraine may be easily differentiated from ordinary headaches which are distinctly less paroxysmal, less localized, less disabling, not usually hemicranial and not usually accompanied by visual, visceral, or vasomotor reactions.

Neuralgia differs in that the pain follows a course of the specific nerve involved which is usually tender, and other migraine accompaniments are absent. The headache of biliary crises differs from migraine in that there is usually a history of previous episodes, the headache is not localized and abdominal signs are of greater intensity than the head pain.

The pain in nasal sinusitis is localized to a sinus area, and there is tenderness, and evidence of an inflammatory process, so that sinus pain, whether from pressure or vacuum, should not be easily confused with true migraine.

The visual phenomena of migraine may be confused with tumors located in the occipital lobe, but the differentiation soon becomes clear.

The headaches occurring in neurological or other organic diseases are usually explained by the finding of definite pathology and are likely to be continuous and not paroxysmal.

In brain tumor the pains are not only continuous, but steadily increase in severity, and manifest localizing signs.

In syphilitic meningitis there is continuous head pain, cranial nerve involvement and a positive serology to aid in the diagnosis.

In minor epilepsy the paresthesias are momentary

while in migraine they may continue several minutes. In migraine there are no interval convulsive episodes as in epilepsy. The electroencephalogram is not characteristic.¹³

The diagnosis of migraine may be proven by relief of the attack with a hypodermic of ergotamine tartrate, 0.1 cc; or by the use of nitroglycerine, 1/100 gr. under the tongue to precipitate an episode.²²

Migraine headache can be differentiated from histamine headache by the use of an injection of histamine to precipitate a headache, when the nature of the distribution will indicate the involvement of external carotid artery branches if it is a migraine, and of the internal carotid artery branch if it is histamine cephalgia.²²

The types of migraine discussed by various authors usually depend upon etiology, or localization of the vascular spasm and dilatation, or the clinical manifestations.

We may, therefore, describe migraine as allergic,¹ endocrinological, menstrual, hypertensive,⁵ and emotional; or preferably, ophthalmic,^{4, 7} vestibular,⁴ pseudo-anginal,⁴ visceral,⁴ hemiparetic;^{3, 8} and of course, the classical hemicranial cephalgia.

There is a certain group of patients in whom there is recognized a possible psychic equivalent of migraine,⁵ although some of these may be debated on the basis of a possible hysterical dissassociation.⁶

The usual psychic equivalent described occurs after the preliminary aura and substitutes for the head pain. The usual manifestation is of a brief period of confusion, with detachment, or disassociation for immediate contacts for some minutes, and is occasionally followed by a characteristic head pain, or even with nausea and vomiting.⁵

Obviously before any condition can be classified as migraine, or a migraine equivalent, it is mandatory that there be demonstrated a complete migraine history extending back through the years, with a history of repeated paroxysmal episodes of classical migraine headaches. It is important to keep in mind that these psychic "equivalents" are very infrequent substitutions for the usual head pain, and arise only as a rare experience in some few migraine patients.

Through the past years a tremendous amount of research work has been done on the subject of migraine by physiologists, internists, neurosurgeons and others, and although we can enumerate predisposing factors, and precipitating causes for migraine, and can even watch the mechanism at work and can interpret its performance, still we do not know exactly what brings on the migraine attack or just why the disease exists.

Treatment, therefore, continues to be experimen-

tal and extends all the way from neurosurgery to an effort to shift the finer chemical balances of the body. In between we come upon various efforts to attack the body as a whole or any of its parts in which the paroxysm may have become manifested.

In the treatment of migraine then it seems obvious that we cannot afford to overlook any one of the suggested causes or methods of therapy. We must consider every patient on his own merits as a total human being with certain predisposing qualities, certain likely precipitating factors, and characteristic patterns for the manifestations of the illness.

Migraine patients, therefore, require a careful personal and sociological history, a thorough and complete psychiatric evaluation, a detailed neurological examination, and a thorough and painstaking physical examination including laboratory procedures, spinal fluid studies and electro-encephalogram. Whatever is wrong with the patient should be corrected, regardless of how insignificant it may seem. His work habits, his home life, his personal aptitudes, interests and dislikes should be carefully surveyed. Situations which are likely to produce tension and anxiety should gradually be eliminated, and an effort must be made to teach him to get on with his job in the world in spite of his illness.

The actual treatment of migraine may be considered on the basis of measures for relief of the acute episode, for relief or alteration of the basic factors, and for management of the patient in relation to his life situation.

For the relief of the acute episode in the true migraine attack it is generally considered that ergot preparations are the most helpful.²³ Of these ergotamine tartrate is the drug of choice in that prompt relief is reported in 90 per cent of the cases.^{23, 2, 24, 13} The dose is (0.5 cc or 1 cc) (0.25 gm or 0.5 gm) given by hypo into a large muscle for prompt absorption. The larger dose may cause nausea and vomiting in some patients until they get accustomed to it.

Other ergot preparations are in use, such as dihydroergotamine which will relieve about 70 per cent of the patients, but has the advantage of being somewhat less toxic.^{25, 26, 27, 28, 29, 31, 32}

Ergovane³³ has also been used, but only controls about 40 per cent of the cases and seems to have no advantage over dihydroergotamine.

Wolf and others have shown that the ergot preparations bring relief through their ability to increase the tone of the arteries toward contraction, and thus produce an increase in blood flow and blood pressure, and a consequent decrease in blood volume in the area of dilatation and pressure.^{23, 2, 31}

Palmer reported a series of cases in whom the attack was relieved by massive injections of vitamin B₁; it was suggested that cibalgene tends to lessen the severity, though does not relieve the pain of the episode; and octin mucate in 200 mg. doses has helped others.¹⁸

Concentrated oxygen inhalations have seemed to bring relief to some.

Prostigmine has been tried and occasionally lessens the severity of attack, but seems to be more specific in aiding the histamine cephalgia rather than true migraine.^{35, 21, 27}

Intravenous histamine has been attempted in some instances, but carried the hazard of increasing the severity of a possible histamine by-reaction.

Theophyllin is recommended by some, but has not been too effective.⁹

An occasional patient will gain some relief by the inhalation or ingestion of benzedrene sulfate.

Rarely do the opiates succeed in relieving the paroxysmal episode, although they may at times lessen the intensity of the pain. Obviously the danger of the formation of drug habits, because of the repetitious nature of the malady, would seem to prohibit the use of narcotics.

On the basis of general measures in the hope of lessening the frequency and severity of attacks, it is obvious that desensitization against allergic factors,³⁸ or to histamine sensitivity are necessary where indicated.^{39, 26, 40}

The use of massive vitamin injections, particularly of vitamin B₁, nicotinamide, and riboflavin seems reasonable.^{6, 41}

The injection of excessive amounts of calcium lactate and of potassium salts has been recommended;^{38, 42} while others advise a high protein diet²⁹ with restriction of salt, water and carbohydrates with the addition of ammonium chloride.

It is apparent that clinical management and dietary restrictions become a matter of individual appraisal and adjustment and can follow no final rule.

Endocrine therapy also is a matter dependent upon the needs of the specific case although some give gonadotropines rather freely.⁴³ It has been shown repeatedly that induced menopause does not bring relief, but often aggravates the condition severely.⁴⁴

Other drugs that are administered during intervals between attacks are potassium thiocyanate, atropine and its derivatives, phenobarbital, and anticonvulsants such as dilantin and mesantoin. These latter do not seem to be of any particular value since this localization is vascular and not cortical in origin.

In line with our atomic age it has been suggested that cloths impregnated with radioactive materials may be laid on the side of the head over the pain to bring relief.⁵

More acceptable may be the suggestion that nicotinamide taken with a generous draught of whisky will relieve some of these migraine attacks.³¹

In the presence of such a severe, intractable, disabling condition, even radical surgical measures would seem justifiable, although such efforts must be understood to be largely experimental and likely to bring only temporary relief in most cases. Many of the surgical patients have shown relief for three to nine months only, and to have a gradual return of old symptoms, and not infrequently they are more severe and more intractable than before operation.

Among the surgical procedures undertaken have been bilateral cervical sympathectomy;^{18, 45} resection of thoracic sympathetic ganglion; ligation and resection of the middle meningeal artery; periarticular sympathectomy of the common carotid; ligation and section of the external carotid; resection of the superior cervical ganglion; resection of upper part of sympathetic chain on the side of the migraine; and removal of the cervical-thoracic chain. Still further surgical measures include novocain injection of sphenopalatine ganglion,⁵² for a localized migraine; and a novocain injection of the gasserian ganglion, followed by subtotal removal of trifacial nerve which gave good results.

Alcohol injection of the gasserian ganglion has brought temporary relief in some,¹² while a cut through the upper third of the root of the gasserian ganglion has relieved the pain for a time.⁴⁵ Cervical sympathectomy on the side of paroxysm has relieved the pain for some months.⁴⁵

Resection of the greater superficial petrosal nerve has brought relief for some months.⁴⁶

Injection of the stellate ganglion with procain, followed by ganglionectomy if pain is relieved,⁴⁷ has been attempted successfully. The same author has sectioned the middle and upper two-thirds of the trigeminal root with some success.

It may be well to mention again that these surgical measures have chiefly given relief of the pain for a period of a few months only and rarely for any prolonged period of time.

In addition to the treatment of the acute attack an effort should be made to lessen and control the frequency of attacks and a great deal can be done through general management of the patient, and a program to improve his general physical and emotional tone.

All migraine sufferers gradually develop a ten-

dency toward neuroses, extreme fatigability, and invalidism which must be strongly guarded against. 4, 12, 31, 48 They must learn self discipline, and self rehabilitation, and to manage their existence in such a way that the paroxysmal headache will interfere as little as possible with their required routine of life.⁴⁸

Many such patients learn to recognize prodromal signs of an impending attack and promptly give themselves a hypodermic of ergotamine tartrate (gynergen), rest for an hour, or until the attack is aborted, and then go on about their affairs.

It is interesting to observe that many of these controllable cases demonstrate a sense of freedom, and of well being, for a day or so after such an attack is successfully aborted or terminated.

In summary then we may say that although migraine continues to be studied with great intensity by many brilliant workers in diversified fields, and although some understanding exists as to the mechanisms involved in the acute paroxysm, and some measure of control has been devised, no actual knowledge as yet exists to explain the significant underlying etiological factors.

The emphasis in treatment therefore must continue, for the present, in an effort to relieve the acute paroxysm and to control the frequency and duration of attacks.

It is essential to maintain the broad concept of considering the patient as a whole with his physical factors, his personality and emotional problems, and his sociological difficulties; and to help him to develop an ability to surmount his handicaps, and to develop an increasingly satisfactory philosophy of life.

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Medico-Legal Aspects of Migraine

From time to time unscrupulous physicians will be tempted to favor a beseeching defense attorney with some form of mental aberration to defend a criminal act.

It is again the old story of "momentary insanity" which has been outlawed in most states.

Since epileptic psychic equivalents have properly taken their place in this defense armamentarium, it has been required that the presence of undisputed epilepsy must be shown.

More recently, with increasing interest arising in migraine psychic equivalents, some of our willing friends have attempted to prove that a criminal act could be committed during a migraine psychic equivalent, which could then be considered momentary insanity.

Obviously it would be necessary to prove beyond a doubt the presence of a classical migraine history with typical migraine episodes.

Even if it were shown that the defendant was a sufferer from true migraine, it would also be necessary to show that he was subject to the rare experience of psychic equivalents.

However, it can be shown that no one during a migraine psychic equivalent ever carried out a purposeful planned action, such as occurs in the epileptic psychic equivalent.

The migraine psychic equivalents have uniformly been accompanied by confusion, and if any change in action has occurred, it has been in the direction of a dissatisfaction and discontinuance of action.

The whole episode of the migraine attack continues for a long time, for many minutes or for hours, and cannot be considered as momentary.

A glaring example of an attempt to stretch the truth was a recent case.

The criminal recalled placing the gun against his victim's head, recalled that he heard the explosion, saw the flash of the gun and saw the man's head fall back from the impact of the bullet, but claimed that he had had a migraine psychic equivalent at the moment of pulling the trigger and so was unable to recall that particular detail. Thus he was to be considered temporarily insane and not responsible for his act.

In this instance there was not even the excuse of a migraine history.

Since considerable discussion has arisen in certain legal circles about this prize, the migraine psychic equivalent, it seemed wise to call attention to the truth of the matter to protect ourselves and the legal circles about this prize, the migraine psychic honor of the court.

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Treatment of Genitourinary Tuberculosis with Streptomycin

A. D. Mitchell, M.D.*

Kansas City, Kansas

Twenty-seven patients with genitourinary tuberculosis have completed treatment or are being treated with streptomycin at Fitzsimons General Hospital as an adjunct to systematized heliotherapy. At present 20 patients have completed a course of treatment. While the ultimate effectiveness of this antibiotic agent against genitourinary tuberculosis will not be apparent until follow up information is available on these and other similarly treated patients, sufficient information has been obtained to justify a preliminary report at this time.

Eleven patients have completed a course of 240 grams, and three patients have completed approximately 500 grams of streptomycin administered intramuscularly, dividing two grams daily into five equal doses from eight in the morning to midnight. Since toxic manifestations were rather prominent in patients receiving two grams daily, and improvement was in evidence in many patients during the first month of treatment, a second group of patients was given one-half gram of streptomycin every 12 hours for a period of two months. Fluid intake was not restricted, and no attempt was made to regulate the pH of the urine.

The 20 patients ranged in age from 16 to 57 years, averaging 33 years. Nineteen patients were males, and one was a female. Four patients had arrested, and nine had active extra genitourinary tuberculosis.

Labyrinthine dysfunction was present in 76 per cent of patients receiving two grams of streptomycin daily. Three patients required discontinuation of streptomycin, two because of severe labyrinthine symptoms and one because of exfoliative dermatitis and fever which recurred on three trials with smaller doses of streptomycin. These three patients received 74, 82, and 82 grams and are included with the group receiving one gram daily for 60 days. Sixty per cent of the patients tolerated two grams of streptomycin daily for four months with negligible symptoms, and 86 per cent tolerated this dosage with symptoms which were not severely disabling. None of the three patients completing 60 grams at one gram daily experienced toxic symptoms.

Eight surgical procedures were performed on these 20 patients during treatment, and nine operations had been performed on them prior to strepto-

mycin therapy. Figure 1 shows the organ distribution of tuberculous disease in these patients and the total dose of streptomycin given.

Figure 1. *Organ Distribution and Dosage*

Group I 240 Grams or more of Streptomycin at 2 Grams daily.

KB	P (E) (T) (E) S	(K) KPVV (E)
(K) B*	P (V) (E) *	KKBP*
KKB	P (E) (T) S	BPV (E) S
KB	PVV	BKPVVE
(K) B	PVV (E) (E) (T) S	

Group II 60 Grams Streptomycin

KB	(E) (E) (T) S	KKBPVVEE
KKUB	PV (E) (T)	(K) KBEE

* 500 Grams or more. K = Kidney; B = Bladder; P = Prostate; E = Epididymis; V = Seminal Vesicle; T = Testicle; S = Draining Sinus; () signifies the organ was removed surgically.

Results

Despite the lack of information concerning long term benefits of streptomycin therapy as an adjunct to systematize heliotherapy in the treatment of genitourinary tuberculosis, some relatively prompt and encouraging observations have been made. Symptomatic improvement was obtained in 16 of 17 patients with symptomatic disease (Figure 2). Relief of irritative urinary symptoms was not complete in all 11 patients but was significant. Renal pain was present in only one patient and was not improved. Scrotal discomfort was not severe in any of this series but was relieved in all patients with this complaint.

Figure 2. *Subjective Improvement*

	Group I	Group II
Irritative urinary symptoms	8 of 8	3 of 3
Renal pain	0 of 1	0
Scrotal pain	3 of 3	2 of 2

Objective improvement as manifested by changes in physical findings, cystoscopy, bladder volume and pyelography was obtained in the number shown in Figure 3. The eight patients whose internal genitalia improved as noted on rectal examination showed varying degrees of resolution as manifested by decrease in size, firmness and nodularity of the prostate and seminal vesicles. Improvement of tuberculous epididymitis without surgical removal was obtained in three patients as shown by decrease in size and hardness of the involved organ. Draining sinuses, whether in the scrotum or in the nephrectomy wound, healed within the first month of streptomycin therapy. Of eight surgical procedures per-

* Paper prepared by Dr. Mitchell (Captain, M.C., A.U.S.) while on Urological Surgical Section, Fitzsimons General Hospital, Denver, Colorado. Now resident in urology, University of Kansas Medical Center.

formed during streptomycin treatment, including one nephrectomy, four epididymectomies, two epididymo-orchidectomies and one seminal vesiculectomy, only one epididymo-orchidectomy failed to heal by primary union. This wound opened on the 14th postoperative day and was healed on the 23rd postoperative day.

Cystoscopy was performed by the same observer in all cases and variable improvement was seen to develop in eight of ten patients. One patient refused cystoscopy; four patients developed completely healed bladder mucosa; three showed marked reduction in the size of bladder ulcers; one patient's bladder improved satisfactorily but three ulcers developed two months after finishing 240 grams of streptomycin, and two patients showed no improvement cystoscopically. Bladder capacity proved quite variable and unreliable if over 300 cc. Of three patients with definitely contracted bladders, improvement of some degree was obtained in all. No pyelographic improvement was observed, but this does not seem discouraging, as x-ray evidence of healing a caseous lesion would not be expected in such a short period of observation.

Figure 3. *Objective Improvement*

	Group I	Group II
Internal genitalia	7 of 9	1 of 2
External genitalia with surgery	3 of 6	1 of 3
External genitalia without surgery	3 of 6	2 of 3
Draining sinuses	4 of 4	1 of 1
Cystoscopy	6 of 7	2 of 3
Complete healing	3	1
Incomplete without relapse	2	1
Incomplete with relapse	1	
No improvement	1	1
Increased bladder volume	2 of 2	1 of 1
Improved pyelography	0 of 5	0 of 4

Laboratory improvement was evidenced by elimination or reduction of pyuria, hematuria, and tubercle bacilluria and by slowing of the sedimentation rate as is shown in Figure 4. In only three of these patients have tubercle bacilli been recovered from the genitourinary tract after administration of streptomycin. A positive smear was obtained in one patient four days after discontinuing the antibiotic agent. A positive culture for tubercle bacilli was obtained from a surgical specimen (epididymis) removed from a second patient seven months after completing 240 grams of streptomycin. Another surgical specimen (seminal vesicle) was removed from this same patient after resuming streptomycin, and no acid fast organisms were obtained on Petragani's media. Eight months after receiving a total of 495 grams of streptomycin a positive acid fast smear was obtained on an ejaculated specimen from this patient. A positive tubercle bacillus culture was obtained in another patient with renal involvement after receiving two grams of streptomycin for 60

days. These organisms were resistant to 1000 micrograms of streptomycin per cubic centimeter whereas they were sensitive to one microgram per cubic centimeter prior to treatment. Smears and cultures were not considered negative until three 24-hour urines had produced negative results.

The sedimentation rate was increased before treatment in only nine of the 20 patients and became normal during or after completing streptomycin therapy in eight of the nine (Figure 4).

Figure 4. *Improvement in Clinical Laboratory Findings*

	Group I	Group II
Pyuria	7 of 10	4 of 5
Hematuria	5 of 6	2 of 3
TBC smears and cultures	7 of 10	.....
Sedimentation rate	4 of 5	4 of 4

Organizing patients into groups on a basis of the type of improvement shown during treatment reveals that of 14 patients receiving 240 grams or more of streptomycin, eight demonstrated both clinical and laboratory evidence of improvement, and six showed only clinical improvement. Of the six patients receiving approximately 60 grams of streptomycin, four demonstrated evidence of clinical and laboratory improvement, and two showed only clinical improvement (Figure 5).

Figure 5

	Group I	Group II
Patients	14	6
Clinical and Laboratory Improvement	8	4
Clinical Improvement	6	2
No Improvement	0	0

It is thus evident that all patients treated with streptomycin improved to some degree during active treatment.

Of more significance is a classification based on prognosis. The 14 patients receiving 240 grams or more of streptomycin have been followed an average of five months, ranging from one to ten months. And the six patients receiving the smaller total dose have been followed an average of 2.8 months, ranging from one week to six months. Dividing the patients into three post-treatment prognostic categories we find (a) six of the 20 patients with no evidence of active genitourinary tuberculosis, (b) eight patients who have obtained incomplete improvement of significance, and who have shown no evidence of relapse, and (c) six patients who cannot be considered to have received benefit of significance from streptomycin treatment. Further follow up information may modify these figures greatly.

Review of Cases

Case 2: This 49-year-old white male had pulmonary tuberculosis in 1919, and a left nephrectomy for tuberculosis of the kidney in 1943. On admission he had moderate nocturia, frequency and burn-

ing, and a diagnosis of ulcerative tuberculous cystitis was made based on cystoscopic and cultural evidence. The remaining kidney was normal. Two courses of streptomycin were given. The first course of three grams daily was given for 124 days and the second course at two grams daily was continued for 122 days. During treatment four 24-hour urines were negative on smear and culture for tubercle bacilli, microscopic urines showed 3-5 WBC throughout treatment, and the bladder mucosa was observed to become normal except for one small ulcer. Eight months after finishing streptomycin this patient is voiding nine times in 24 hours with slight terminal dysuria.

Case 4: This 34-year-old white male developed severe irritative urinary symptoms in May 1945 and had a nephrectomy in September 1945 for tuberculous disease. After temporary improvement symptoms recurred, and several positive urine smears and cultures for tubercle bacilli were obtained. The remaining kidney was normal pyelographically. Bladder capacity became reduced to less than 30 cc. He was treated with 282 grams of streptomycin in 148 treatment days and the bladder was dilated hydrostatically at regular intervals. During treatment four negative tubercle bacilli smears and cultures were obtained. Five months after streptomycin was discontinued he was voiding 60 cc. at a time with nocturia 4-6 times and had no burning on urination. The ulcerated bladder mucosa was observed to heal completely during treatment and the capacity under anesthesia increased from 30 cc. to 150 cc. without bleeding.

Case 8: A 25-year-old white male with a diagnosis of pulmonary and bone tuberculosis in 1946 developed pain in the scrotum in January 1947. A diagnosis of tuberculosis of the right epididymis, prostate and right seminal vesicle was made. In March 1947, seven months after receiving 240 grams of streptomycin, a right epididymectomy was done, and pus from the specimen contained tubercle bacilli. In May 1947, after 180 grams more of streptomycin, a seminal vesiculectomy was done, and pus from this specimen contained no tubercle bacilli. Both surgical wounds healed by first intention. Five months after termination of streptomycin the patient was asymptomatic and genitourinary examination was negative. Eight months after finishing a total of 495 grams of streptomycin the left seminal vesicle and prostate were enlarged, hard and nodular, and a positive acid fast smear was obtained from an ejaculated specimen. The patient remained asymptomatic.

Case 9: A 29-year-old white male with bilateral pulmonary tuberculosis had a right epididymectomy and orchidectomy in February 1946, and these speci-

mens were reported to be histologically tuberculous. In November 1946 he developed left epididymitis and a draining scrotal sinus without urinary symptoms. The prostate was enlarged, hard and nodular. A urine specimen obtained immediately after prostatic massage produced a positive tubercle bacillus culture; all other urines were negative for tubercle bacilli. One month after starting two grams of streptomycin daily the scrotal sinuses were dry. After three months of streptomycin an epididymectomy was done. Streptomycin was continued another month. At the termination of streptomycin treatment there was no change in the prostate and the scrotum was dry. Four months after treatment the patient remained asymptomatic, and there was no pyuria.

Case 15: This 16-year-old white female had irritative urinary symptoms for two years prior to admission. Examination revealed left superior calyceal destruction, a positive tubercle bacilli culture from the left kidney and a large ulcer on the posterior wall of the bladder. This patient had shown improvement on heliotherapy alone, in that her nocturia was reduced from five to two times nightly, and burning on urination had become somewhat less. Because of this improvement a course of streptomycin was given rather than performing a nephrectomy. After eight weeks of streptomycin at one gram daily she had nocturia once nightly and no burning on urination. The bladder was normal except for a narrow linear ulcer, and there was no pyuria. The pyelographic evidence of destruction was unchanged.

Case 17: This 30-year-old white male had acute right epididymitis in 1943 followed by a draining sinus, the fluid from which contained tubercle bacilli. A right epididymectomy was done in 1944. In June 1947 he developed left epididymitis. After a total of ten grams of streptomycin was given in five days, a left epididymo-orchidectomy was done and the wound healed by primary intention. Three months later a small draining sinus developed in the upper end of the left scrotal incision. Drainage was slight and no positive laboratory data for tuberculosis was obtained. After 14 days of streptomycin the sinus was healed and remained healed two months after completion of 60 grams of streptomycin at one gram daily.

Discussion

There is certainly insufficient information obtainable from this small series to determine the proper daily and total dose of streptomycin for all the various types of genitourinary tuberculosis. However, from present information, it appears that streptomycin is indicated in all cases of genitourinary tuberculosis.

1. Draining sinuses will respond well to one gram of streptomycin daily for four to six weeks.

2. One gram of streptomycin daily for three weeks pre- and postoperatively should be an optimum amount for surgical procedures performed for tuberculous lesions of the genitourinary tract.

3. Bladder tuberculosis should be most amenable to streptomycin, since one-half to three-fourths of the intramuscular dose is excreted in the urine. The proper dose appears to be large if the vesical lesion is at all marked as evidenced by ulceration. If tuberculous disease of the kidneys is absent and ulceration is not extensive, our recommended dosage is one-half gram of streptomycin every 12 hours for eight weeks at which time the patient should be re-examined cystoscopically. If sufficient improvement has not been obtained the drug should be continued another eight weeks. If marked ulceration is present two grams of streptomycin daily for two to four months is indicated.

Two patients in this series who had tubercles in the bladder without ulcers obtained normal vesical mucosa after 120 grams of streptomycin, and one patient with severe ulcerative tuberculosis obtained a normal bladder mucosa after 262 grams of streptomycin, but four patients had vesical ulcers and tubercles after 240, 240, 310, and 510 grams respectively.

4. The proper dose of streptomycin for genital tuberculosis will depend on the type, extent and duration of the lesion. One gram daily for six to eight weeks should be adequate for most lesions in this category.

5. Knowledge of the place of streptomycin in the treatment of renal tuberculosis awaits adequate follow-up information. No evidence of improvement in pyelograms has been observed in this series, but five patients with positive cultures of urine obtained from the kidney prior to streptomycin treatment have remained negative culturally.

Our tentative recommended dosage of streptomycin in non-surgical renal tuberculosis is one gram daily for eight to 16 weeks. One gram daily for three weeks pre- and postoperatively is recommended for surgical renal tuberculosis.

That poor renal function is a contraindication per se to treatment with streptomycin has not been

borne out by this project. Two patients with very poor renal function were treated. One was given two grams daily and the drug had to be discontinued because of severe vertigo after 82 grams. The other patient was given one gram daily for 60 days without ill effect and also without significant improvement.

How much of the improvement obtained was due to systematized rest and heliotherapy cannot be determined, but certainly streptomycin cannot be considered a substitute for, but rather must be used as an adjunct to, standard sanatorium care and judicious surgery.

The use of purified derivatives of chaulmoogra oil with streptomycin, as reported by Slotkin, may further modify the antibiotic management of this disease.

One unfortunate development resulting from the use of streptomycin is that the patient who has finished a course of streptomycin and is relatively asymptomatic thinks he is cured and is ready to go back to a full schedule of work. Every effort is made at Fitzsimons General Hospital to dispel this view and to obtain a period of reduced activity for at least six months to a year after treatment.

Summary

A review of 20 patients who have completed a course of streptomycin is presented. Fourteen patients received 240 grams or more of the antibiotic and six patients received 60 grams, approximately.

Results are presented from subjective, objective and laboratory view points.

Indications and recommended dosages are given.

Although all patients treated showed evidence of laboratory and/or clinical improvement to some degree, only six of the 20 patients showed no evidence of active genitourinary tuberculosis after streptomycin treatment, and eight others showed improvement of significance.

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Treatment of the Acute Stage of Anterior Poliomyelitis (A Study on the Use of Curare) *

M. E. Pusitz, M.D.

Topeka, Kansas

Introduction:

The following is a resume of the procedures adopted in the treatment of 104 consecutive cases of acute infantile paralysis in the epidemic of 1946, in a small institution, and with effective results. With the exception of 12 cases, all were hospitalized. Of these, the vast majority were referred into Topeka from other localities, and some from long distances. These were, therefore, might "sick" people, who required immediate and effective therapy.

No controversial stand is being adopted. We are not Kenny enthusiasts but we do have an admiration for her work which has stimulated the medical fraternity to renewed investigation of these problems. We may not agree with her in very many respects, but we do agree that it is only in the exceptional case, indeed, that rigid immobilization is indicated. At the same time, we can not agree with McCarroll on his stand that regardless of treatment (or no treatment) the results are the same. There is more to the treatment of infantile paralysis than just the cataloging of flaccid paralyses, and the use of braces and surgery. Our own experience here has revealed many contractures in these so-called untreated cases. Since returning from service to practice, we have encountered many residual effects due to polio in the form of contractures, tight muscles in the erector spinae muscle group, the hamstrings, etc. We had seen some of these cases in service.

An excellent discussion of this problem has been recently published under the title of "Muscle Fibrodystrophy." It is not a question of whether physiotherapy or muscle education or curare, or anything else for that matter, cures—we know that at this time we have no specific treatment, nor specific prevention, of this disease. There is the question, however, of gaining the maximum of function, and it is the contention of the author that this maximum is more easily, more efficiently, and more maximally obtained by a continued program of physiotherapy and muscle education than by haphazard "laissez faire" policies of "no treatment." At the same time, in order to handle efficiently the largest number of cases in the shortest period of time, and with the least tying up of personnel, we must seek for methods which are not trying to the patient, the hospital, and the community. It is the old problem of

"logistics" in the service, which an old army sergeant defined "to win a battle, you must get the mostest, the bestest, the fastest and the firstest to the front." Since the treatment is symptomatic, the routine will be described under symptom headings.

Malaise: Hyperpyrexia: As a general rule, the fever ranges from 101-102. The patient is sick and apprehensive, and is suddenly isolated from his family. Some tact and judgment will improve his fear and enable the doctor to gain the cooperation desired. If the fever goes beyond 102, then a tepid sponge bath, wet packs, or even colonic irrigations can be used. We have not relied on drugs to any extent.

Dehydration: In quite a number of cases, the child has been brought in after some days of nausea and vomiting, or after some days of not taking food or fluids. In at least two cases, it was felt that this was the important precipitating factor leading to death. Intravenous fluid administration is the fastest method of restoring fluids. Fluids by mouth should be encouraged where this is feasible. Until this stage is reached, ample fluid administration should be the rule, intravenously. Fluids can be given per rectum, but this is messy and not always satisfactory, especially in children. Subcutaneous administration is quite painful in children.

Pain: Although there are many who disbelieve pain as a prominent symptom, in this series of 104 cases, in one epidemic, it was almost constant. The pain is severe at times, and the slightest movement will cause a paroxysm of pain, so that the child will dread anyone coming near it. Pain was more constant than headache, and was frequently confused with headache, when the pain was prominent in the back of the neck. Drugs will give temporary relief from this pain, but their dosage must be great, and their effect is temporary. It is not surprising then that the clinician began to seek for more effective measures than drugs to relieve pain. Even rigid immobilization (in the old routine) did not relieve pain in a large percentage of cases. Kenny's hot packs were soon the style for the relief of pain, assuming that this pain was due to muscle spasm. Pain may, however, exist without muscle spasm, and vice versa. In examining many cases which were hot packed, in several institutions, it was felt that only half the cases were really relieved from pain by the hot packs. Curare, on the other hand, has almost

*This study was carried on in conjunction with C. Beach, B.A., P.T., and R. Hamilton, B.A., P.T. The analyses of relaxation were made by the physical therapists.

always relieved pain, and the relief is immediate and dramatic. It was only the exceptional case which did not respond soon to it.

Muscle Spasm: Here again one enters a somewhat controversial field. But muscle spasm was a definite symptom in almost all of the cases in this epidemic. It was not felt that muscle spasm was always the cause of pain, since some cases presented pain without muscle spasm being present, and other cases presented muscle spasm without discomfort. It is true, however, that the majority of cases presented both muscle spasm and pain. Here again it was felt that hot packs would do well to relieve muscle spasm in half the cases. Moreover hot packs required an army of personnel, which a small institution could not afford. For this reason, all the hospitals in this vicinity closed the doors to infantile paralysis. Clearly a simpler and more effective method was necessary; this was found in the use of curare.

Curare relieved muscle spasm in every case it was used. It relieved muscle spasm in cases where hot packs had failed, and where the use of prostigmin had failed. Following the reports of Ransohoff, curare was tried out in this epidemic in a total of 53 cases. Every case responded well to the use of this drug with relief of pain and muscle spasm. A more detailed discussion will follow under the heading of curare administration.

Curare Administration: In this group of 104 cases, 12 were treated in the home. In this group, with less severe symptomatology, prostigmin was used alone, with fair effect in relieving pain and muscle spasm. Of the 92 hospital cases, 14 were hot packed. Of these, three were effectively treated with hot packs alone; two had prostigmin added to obtain relief. In three cases of hot packs and prostigmin, the relief was not adequate, but immediately became adequate when they were switched to curare therapy alone. In six cases, hot packs were ineffective, and so they were switched to curare alone immediately, without using prostigmin. All obtained immediate relief with curare.

Curare was used in a total of 53 cases. The drug was administered intramuscularly three times daily, starting with a minimal dose of 0.9 units of intocostarin per kilo of body weight, and increasing gradually until an effective dose was reached, never more than 1.5 units. At first the drug was given at certain specified hours, but later the drug time was staggered so that the physiotherapist could give treatment shortly after the administration of the drug, with maximum relaxation, and therefore minimum pain following manipulative therapy. In no case was curare required beyond a period of three weeks; in no case was curare unable to relieve muscle spasm.

In four cases there were reactions which worried us. Two of these were rather simple; one was disturbance of respiration which required about ten minutes to clear up. In one case there was doubt cast on curare, but this was undeserved. A patient with severe bulbar involvement, with complete paralysis of one side of the chest and half the diaphragm, with facial paralysis and involvement of the muscles of speech and pharynx, was doing very poorly on hot packs, with much pain, muscle spasm, and discomfort. With curare, he was relieved of pain and muscle spasm, but the involvement of the chest, diaphragm, pharynx and speech continued. He died of evident respiratory failure, after he had been on curare for about three weeks. Obviously curare after three weeks would not suddenly be fatal, and the patient had enough pathology to explain the cause of death on the basis of bulbar involvement.

The use of curare entailed no complicated series of procedures, only the intramuscular administration of the drug three times a day, with the instruction that a graduate nurse must be present at and following the administration for at least 20 minutes; the graduate nurse being instructed in the routine of artificial respiration. Artificial respiration was used on the fatal case above mentioned, but had no effect, because, as stated, it was a respiratory centre affair and not a peripheral one as in curare poisoning. Artificial respiration was used on the other case with respiratory difficulty and was immediately successful in relieving all symptoms and could be discontinued at the end of about 15 minutes. One patient had an idiosyncrasy to the drug and would vomit each time the drug was administered, so the drug had to be discontinued.

With the use of curare there were no difficulties encountered in taking care of as many as 14 cases at one time, in a small institution which was not well equipped to handle these cases at all. In one instance, by mistake, a dose two and one-fifths times the maximum dose was administered to a small child, without any deleterious effect. This was detected by the family pediatrician after it had been administered. So marked and complete was relief of pain and muscle spasm obtained that the physiotherapist could tell which cases were receiving curare, and repeatedly asked for the use of the drug.

Contracture: That contracture takes place in poliomyelitis has long been recognized. The Steindler clinic has stressed this development, particularly with cast immobilization and in muscles which were paralysed. In fact, some of the worst contractures are seen in zero muscles. Mennell warned against this in his book written many years ago, and emphasized the importance of putting even

paralyzed muscle through its range of motion. It was Kenny who probably put the greatest emphasis on this phase of the subject, although the author does not entirely agree with her interpretation.

Contracture is separate and distinct from muscle spasm; a muscle in muscle spasm may go into contracture, but a paralysed muscle may also go into contracture. Muscle spasm is present only in muscles which are partially or not at all paralyzed. Muscles completely paralysed evince no muscle spasm. For many years we have been noting muscle contractures following poliomyelitis in the nature of pes cavus or pes valgus, malposture, extreme limitation of extensibility of muscles, particularly shown in the erector spinae muscle mass, the hamstrings, the flexors of the knees, etc. Bingham recently described this in a large series of cases seen in service, and which he collected under the term "muscle fibrodystrophy." Even where there has been no actual paralysis of any of the muscles, this condition can and frequently does supervene. Certainly this is another argument against the interpretation of McCarroll as to the uselessness of physiotherapy and muscle education. We have noted this in quite a percentage of these early cases, just as Bingham has done in the old chronic cases not recognized until many years later.

To prevent contracture, we have adopted the procedures advocated by Ransohoff, namely, the adequate stretching of all muscles, whether they are paralyzed or not, but particularly those groups of muscles which have been in spasm, and which we have found to readily go into a state of contracture—the erector spinae muscles, the hamstrings, flexors of the knee, flexors of the foot, adductors of the shoulder, flexors of the elbow, dorsiflexors of the wrist, etc. The time to institute these stretchings is preferably when they are completely relaxed by the curare, the prostigmin, or the hot packs—but best curare. The curare was staggered so that the physiotherapist gave the treatment about 20 minutes after injection, when the patient was in a state of maximum relaxation. As a result, there was very little serious complaint of pain on the stretching exercises. The entire body is gone over in this manner in a routine manner. It would take 20-30 minutes in an involved case for the complete schedule of stretchings. Immediately after the stretching routine, the patient is encouraged in a routine of exercises to develop the weaker muscles, combat deformity, along the line of muscle education followed by the general masseuse. First movements are made with the assistance of gravity, then without gravity, then against gravity, and finally against resistance. Stretchings are started as soon as the patient's general condition has improved, even though there may still be elevation of tempera-

ture. In most cases, muscle education is well on its way by the third or fourth day. The primary object in view is to get the patient up early and to get him walking just as soon as one can.

Patients without paralysis are ready to sit up as soon as their temperature is normal, and to start walking shortly thereafter. It has been amazing how rapidly the unparalysed cases make a comeback. By far the vast majority of the patients without paralysis are walking by the end of the tenth day, and discharged at the end of two weeks. Patients with mild paralysis walk just about as rapidly. Moderate paralysis may require the use of splints and supports, which will be discussed below. Seldom is more than one month required except for the severe paralytic cases. The severe paralytic cases are encouraged in the same way to get up with braces and crutches as soon as possible and get going. As much as possible, the attempt has been made not to hospitalize these cases for too long a period of time, but rather to get them up and around as soon as possible, and have them return routinely for further treatment, check-up and muscle education as out-patients.

Apprehension: Patients old enough to know what it is all about are much more difficult to handle because of their fear and apprehension. Too much emphasis can not be placed on the proper psychological approach. This is much more important than any amount of medication, although the latter does help. In a general way, the above approach in which the patient is made active right from the beginning, and has already been started on a tangible program by the time he awakens to the fact that he has polio, keeps the patient too busy to become too concerned. It is when the routine lags, either because the patient has not been started off quickly enough, or where there have been many other complications, that the patient becomes a psychological problem that is difficult to handle. Even a severely paralyzed patient, with both legs and waist paralyzed, with only the arms uninvolved, can be started off immediately on a program of developing the upper extremities to the peak necessary for ambulation later, when braces and crutches are used.

All forms of therapy used should be of such a nature as to disturb the patient as little as possible. For example, the use of an aspirator or suction tube should be done gently and with due consideration for the patient. The use of a soft rubber tube will facilitate things and be less apt to irritate or injure. The use of repeated lumbar punctures is not necessary. One lumbar puncture should be done, but if this is found to be low, no attempt should be made to repeat, if the clinical signs point to the correct diagnosis. Only if the lumbar puncture is too high should one repeat the lumbar puncture, with the idea

of culture, etc., to verify the diagnosis. A lumbar puncture done too early or too late may show perfectly normal findings. It has been our procedure to perform no lumbar puncture in a very sick patient, where the diagnosis is evident, as in flaccid paralysis. Later, when the child is not as sick, a puncture can be done. Two cases sent in with a diagnosis of infantile paralysis were returned to the referring physician with the diagnosis not confirmed because of normal spinal puncture fluid examination and minimal findings clinically. One case returned two months later with complete paralysis of the tibialis anticus.

Treatment of Encephalitic Cases: Treatment of the lower motor neurone type of case with flaccid paralysis was extremely simple compared to the treatment of the bulbar type. Of the six cases that died, all were of the bulbar type, and all died of either respiratory failure or final exhaustion. In this respect, it must be recalled that in an upper motor neurone lesion, the initial phase may evince only flaccid paralysis, and the spasticity may be evident only later. One such case was encountered, which fortunately made good progress.

Involvement of the muscles of the pharynx concerned with swallowing, and of the muscles of the palate concerned with phonation (and closing off of the nasopharynx during swallowing) complicate treatment considerably. With involvement of the ninth and tenth cranial nerves, there results an accumulation of secretions in the pharynx, unswallowed, which interferes with inspiration. This mucus may be aspirated into the lung with the everpresent danger of the development of a terminal pneumonia. Pharyngeal paralysis is always serious. A child who can not swallow can not breathe well. If he does not choke himself, he gradually gets into a state of extreme fatigue—he has to stay awake most of the time; as soon as he falls asleep he chokes. This extreme fatigue may be the important factor in bringing about the death of the patient. One must differentiate pharyngeal paralysis from true respiratory distress. The respirator is effective in respiratory difficulty but not in pharyngeal disturbance. Even with respiratory distress, one must differentiate between complete centre failure, where the respirator may be effective, but it will not be effective with distortion of the respiratory centre, where the respiration is jerky and irregular.

Treatment of Pharyngeal Paralysis: Rules to Follow:

1. Postural drainage is the first expedient to be tried, and in this care must be taken to ensure that the head of the bed is kept constantly lower than the rest.

2. Avoid excitement, and handle the patient gently; relieve apprehension.

3. Frequent suctioning of the posterior pharynx can be performed by means of an ordinary operating room aspirator, but be gentle. Use a rather soft tube instead of a hard one.

4. Atropin can be used, although its efficacy is questionable.

5. Nothing by mouth or by tube, at least until the temperature is normal, and the patient is beginning to improve. The use of 10 per cent glucose intravenously, or per rectum, may tide the patient over, and give him the necessary fluids to offset any danger of dehydration.

6. Tracheotomy has recently been vaunted as a new method. As a matter of fact, this was first described by Wilson in 1932, who advised it in severe selected cases only to enable the patient to be fed with less fear of choking due to vomiting attacks. It was also thought to prevent aspiration of the pharyngeal secretions, and allow the patient to sleep uninterrupted without choking spells. In selected cases the measure is worth while, but only after all other procedures have been tried. It will need to be used infrequently, where the above measures have failed and the child is frightened and will not relax. Tracheotomy will not keep the child alive if there is muscle paralysis. Even with tracheotomy, one may have to use the respirator.

Do not put a tube down the stomach: Do not Lavage: By the above routine by far the vast majority of bulbar cases recover; and by far the vast majority in one month or more will swallow.

Respiratory Distress: Polio affects respiration in the following ways:

1. Primary muscle paralysis, involving a. the intercostal muscles, b. the diaphragm, c. the abdominal muscles (expiration).

2. By causing dysfunction of the respiratory centre.

3. By causing pharyngeal paralysis.

The respirator is of definite value only in the first type. The intercostal muscles are not so important in children, but the diaphragm is. However, the lower intercostals are used to oppose the diaphragm. As noted above, pharyngeal paralysis is extremely important, and yet fairly hard to differentiate from true respiratory disturbance because it does cause a jerky type of respiration. The respirator is effective in the first type, but it must be remembered that it may be effective when there is complete failure of the centre. But when the centre is distorted, as is usual, the respirator will be of no value, and may even be harmful. The routine adopted in this group of cases was to use the respirator as little as possible. In only one case of the whole series was it felt to

have been of real value. It is interesting to note that all the death cases except one were given the value of respirator use.

Early Signs of Respiratory Muscle Failure (Wilson):

1. Increase in rate; decrease in depth.
2. Interrupted speech. This was a particularly interesting phenomenon noted in one case which finally went on to death, three weeks after treatment with curare.
3. Use of the accessory muscles of respiration in the neck. Flaring nostrils.
4. Excessive drowsiness; encephalitic picture. This is due to chronic anoxia and not to the virus of poliomyelitis.
5. Where both shoulders are paralysed, watch the intercostals.
6. Where there is a true paralysis of the neck, watch the diaphragm.

Grossly irregular respiration soon becomes inadequate respiration and indicates involvement of the respiratory centre; this soon means that the patient is in extremis, from any cause. Flaring of the ribs on inspiration occurs when the diaphragm is paralysed, without paralysis of the intercostals. This is often confused with pneumonia. The latter brings up an interesting problem. In two cases pneumonia did develop in spite of early penicillin therapy. The same therapy, however, resulted in cure. The question whether or not sulpha drug or penicillin therapy can prevent pneumonia is therefore unsolved. Certainly there can be no objection to the use of penicillin as a preventive, where indicated.

Prevention of Deformity: Upon admission to the hospital, an attempt is made in all cases to institute physiotherapy as soon as possible. Boards are placed under the mattress routinely, and the child is encouraged to lie in the anatomical position. Spasm of the posterior muscles of the neck will prohibit the use of a pillow, in the early acute phase, and in the latter part of the acute phase as well, since it will tend to shortening of the anterior neck muscles. Therefore, a very thin padding is placed under the head. The shoulder is not kept abducted, on the contrary in the Kenny position. The knees are prevented from going into hyperextension by thin padding under them, but no pillow is placed under the knees, which would only encourage flexion contracture. The foot is kept at right angles by a foot board. The usual precautions are taken in turning the patient to maintain this anatomical position, but without the fanatic zeal so frequently noted in "institutions." We do not worry about stretching muscles, we encourage it.

As soon as the temperature is normal, even though there is still muscle spasm, and even pain, the pa-

tient is encouraged to sit up, first on the side of the bed, and then in a chair. At the end of the second week, most patients are well beyond this stage if there is no severe paralysis. With severe paralysis, a more cautious attitude is adopted. As soon as stretching can be done without too much pain, and against not too much resistance, the patient is allowed to start standing, with proper shoes, well corrected for the type of weakness present. Careful check up is made every two or three days to catch any beginning deformity and correct it. Soon the patient is walking and with this the patient is discharged, to return for weekly visits to the out-patient service.

Splinting and Braces: Again it is to be emphasized that at present we have no cure for infantile paralysis, so the treatment is symptomatic entirely. The contention that braces or splints are entirely unnecessary is an erroneous statement which has done much harm in confusing the medical profession in general, and the public in particular. There are instances, especially where there is severe paralysis, where braces are most effective in preventing deformity, or even correcting it, and in enabling patients to walk more efficiently, and more quickly.

In this series of cases, 17 required the use of braces of various types; six cases were paralysed from the waist down and therefore required braces on both legs. Four cases required corsets. No arm splints were necessary. The principles of bracing and splinting are not being considered here; suffice it to say that this follows the principles laid down over many decades by the pioneers in orthopedic surgery. It must be admitted, however, that braces and splints are not being used, as evidenced in this series, with near the frequency they used to be. It is felt that the routine of treatment here adopted does not obviate the use of these appliances where required, but that other cases which do not require them are enabled to leave the hospital rapidly and are left with few residual sequelae which have been noted so much more frequently in other epidemics. *Early motion* has been the keynote; get them out of the hospital as rapidly as you can, and get them going in their stride as rapidly as one can. There is no possibility for the development of a poor psychology, not only in the children, but also in their parents. Right from the beginning it is stressed that they play a vital role in the come-back of the patient, and the patient is taught to rely upon himself. There is no time for the development of a "hospitalitis."

Subsequent Treatment in Subacute and Chronic Stages: This is entirely an out-patient service and is a means of constant checkup, with continued supervision of muscle education, attention to braces

and splinting, and follows in the main the principles which have been laid down for many decades in this field. There is nothing new in this and it need not be described.

Results

A consecutive series of 104 cases was treated in the epidemic of 1946. Of these, 12 were so mild they were not hospitalized. Nine hospitalized cases were so mild they received no drug therapy. Fourteen cases were treated with hot packs (because the hospital and patients desired this), and of these only in three were hot packs used alone; in two, prostigmin had to be added. In three cases, hot packs and prostigmin were insufficient, and curare therapy had to be instituted. In six cases, hot packs were not effective enough, and so the patients were immediately transferred to curare treatment. Prostigmin was used in 51 cases, was effective only in 26 cases. Curare was used in 53 cases. In six cases, curare was instituted after hot packs had failed to adequately relieve pain and muscle spasm; in three cases, after ineffective use of hot packs and prostigmin; and in 22 cases, after prostigmin alone had proven ineffective. Curare alone as the initial treatment was used in 22 cases. The medical attendant did not allow his opinion to determine the presence or lack of effectiveness of any procedure used, but left it entirely up to the physical therapist and the nurses, who, after all, were instituting the course of treatment of physical therapy. The opinion of all was unanimous

with reference to the effectiveness of the treatment used. In no case did curare fail to relieve pain to the major extent, and the same was true for muscle spasm.

Of the hospitalized cases, there was absolutely no residual paralysis in 57 cases. To this should be added 11 cases not hospitalized. There was residual paralysis in 29 hospitalized cases and one case not hospitalized. There were six deaths. There were six cases of involvement of the upper extremities, and in only one of these was there residual paralysis of the deltoid. No arm splints were used in any of these cases. Of 17 cases with braces, four discarded the braces within four months. Thirteen were still using braces at the time this was written (November 1947). Two are seriously paralyzed with involvement of the upper and lower extremities, as well as abdominal and back muscles. No true scoliosis has appeared and all contractures have so far been adequately taken care of.

Conclusions

A concise account is given of the treatment of the acute stage of anterior poliomyelitis, and how curare can be used to take care of these cases more adequately and efficiently. This is a preliminary report, and more study is required before definite statements can be made.

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Recurrent Ileus Due to Gallstones

Larry E. Vin Zant, M.D., and James S. Hibbard, M. D.

Wichita, Kansas

Gallstones occur as the etiological factor in mechanical obstruction in about one per cent of reported cases. Martin¹ gives credit to Bartholin for the first authentic case, which appeared in the literature in 1654. Many single and small groups of cases have been reported since, although in only nine cases has there been a recurrent ileus. This report brings the total to ten cases, and the patient is the oldest operated upon twice for gallstone ileus with recovery.

Case Report

A small woman, 85 years of age, entered Wesley Hospital on August 18, 1947, complaining of nausea, vomiting, and pain in the upper left abdomen. She was asymptomatic until four days before admittance, when, upon arising to prepare the morning meal, the pain developed. This was followed by nausea and vomiting. There had been no bowel movement since the onset of her illness. In August, 1946, she had been in the hospital with a diagnosis of low-grade uremia, and cholelithiasis (Figure 1).

Physical examination showed a thin white female acutely ill. Temperature was 99.4. The head and neck were negative except for a few carious teeth.

The heart and lungs showed nothing unusual. The blood pressure was 140/80, pulse rate 80. The abdomen was slightly distended. Mild tenderness was present in the left upper quadrant. There was no rigidity, and no palpable masses were present. Peristalsis was increased as observed through the thin abdomen. Borborygmi could be heard with the stethoscope at the acme of the colicky pains. The urinalysis showed three plus albumen. The red blood count was 4,700,000, white blood count 16,700, with 76 per cent multinuclear cells. The N.P.N. was 96. A flat plate of the abdomen (Figure 2) showed the typical gaseous distention of small bowel obstruction. A crescentic shadow was seen in the right upper quadrant having the appearance of a large gallstone, and a similar large shadow was seen in the small bowel region.

A diagnosis of gallstone small bowel obstruction was made, and since the family refused surgery because of the patient's age, she was treated conservatively. This consisted of continuous trans-nasal duodenal suction and intravenous fluid therapy. Her progress was that of intermittent partial obstruction.



Figure 1. Roentgenogram showing two large positive stones in the region of the gallbladder.



Figure 2. Roentgenogram showing a large stone in the region of the gallbladder and a similar stone above the crest of the left ileum. The small bowel is distended with gas.

tion, without complete decompression or advancement of the stone. Twelve days after onset, permission for operation was granted. At this time her N.P.N. had increased to 126. At operation a 3.5 cm. gallstone was removed from the lower jejunum through an enterotomy opening. On her third post-operative day the N.P.N. had decreased to 65, she was up walking in the hall and was discharged four days later symptom free.

On October 22, 1947, the pain, nausea and vomiting returned. Physical examination showed a moderate distention, increased peristalsis, borborygmi, and no rigidity or mass. A flat plate of the abdomen (Figure 3) showed a gallstone shadow in the left lower quadrant at the level of the crest of the ilium. The calculus previously seen in the gallbladder region was not present. At operation a 3.6 cm. stone was removed from the terminal ileum through an enterotomy opening. She was very nauseated for six post-operative days, but on discharge seven days later had no complaint.

Comment

Gallstones causing obstruction are usually 2.5 cm. in diameter or larger. Entrance into the intestine is by way of the common duct or by means of a fistula between the gallbladder and the intestine. Nearly all stones large enough to cause obstruction must necessarily reach the intestine via a cholecystoenteric fistula. Small non-obstructing stones, however, fre-

quently pass through the common duct and are either vomited or passed in the feces. Murphy cited the incidence of a stone measuring 4.5 cm. by 2.7 cm. supposedly transversing the common duct. In the 10 cases reported by Wakefield, Vickers, and Walters² all the stones had passed through a perforation from the gallbladder into the intestine. Foss and Summers³ reported the postmortem findings in 42 collected cases which revealed the site of the fistula to be between the gallbladder and the duodenum in 41. Courvoisier⁴ found a fistula between the gallbladder and the duodenum to be the most common. Gutmann⁵ estimated that 50 per cent of the stones ulcerating into the bowel cause obstruction.

The symptoms are those of simple mechanical obstruction. The higher and more complete, the more severe the symptoms. The stone frequently acts as a ball valve and causes intermittent partial obstruction. As the stone becomes arrested in the bowel, symptoms develop, and as the spasm relapses the symptoms subside, only to return as the stone becomes arrested further along in the intestinal tract.

The diagnosis is not often made preoperatively. Gilman⁶ states: "In the absence of an incarcerated or strangulated hernia in elderly persons, in whom previous abdominal surgery has not been performed, one must consider gallstones as well as malignancy as a cause of obstruction." The fact that gas and feces may pass per rectum during the phase of relaxation, frequently is a factor in the delay in making an early diagnosis. A number of writers^{7, 8} comment on the lack of distention. A mass can be palpated infrequently. Powers⁹ believes that tenderness beneath the right costal margin suggests a diagnosis of gallstones ileus. The significance of a history of passing stones per rectum is stressed by Cameron¹⁰ who quoted from von Wagner's 334 accumulated cases, in which a stone was passed spontaneously in 93. A positive diagnosis can only be made by x-ray which may show: (1) cholecystoenteric fistula by the presence of air or contrast media in some part of the biliary system. (2) direct visualization of the obstructing stone. (3) small bowel distention.

The treatment of obstruction due to gallstones is early operation. Wangenstein mentioned two patients with small stones and spastic obstruction who were treated with in-lying suction decompression during which the gallstones were passed in the stool. Trans-nasal duodenal suction and intravenous fluid replacement therapy have definitely reduced the mortality rate in intestinal obstruction. We believe they should be used as an adjunct and a surgical procedure should be carried out as soon as optimal pre-operative therapy has been obtained. Closed aseptic removal of the stone can be accomplished

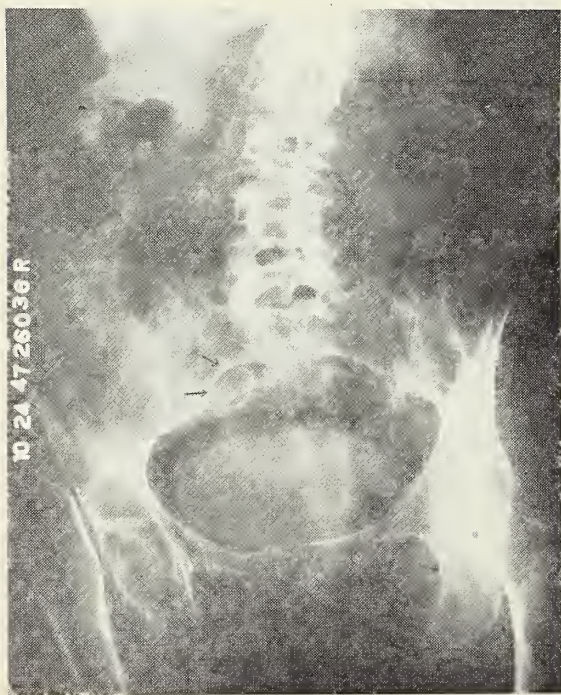


Figure 3. Roentgenogram showing a large stone in the region of the sacrum and the absence of a stone in the gallbladder.

in some cases, but with the use of antibiotics, open enterotomy is perfectly safe. Usually the bowel is not gangrenous so that resection is unnecessary. Great care should be used to prevent leakage from the bowel since the contents of the blocked intestine is extremely infectious, owing partly to the draining biliary fistula. As pointed out by Holz¹¹ multiple stones may be present. In three of his series of five cases of repeated operation for gallstone ileus, the second stone had to be removed during the immediate convalescence from the first operation. The second stone may have been in the bowel at the time of the first operation. Santlar¹² reports mortality of 50 per cent which is about the average reported by other writers. The reasons given for this high mortality rate are delay in operation and of occurrence in later life. Wilcox and Clagett¹³ reported a mortality rate of 7 per cent in 649 patients 65 years of age or older who underwent major operations for benign lesions, and we believe the mortality rate in gallstone ileus should approach this figure.

Summary

(1) The case reported in this paper is the oldest patient, age 85, operated upon twice for recurrent gallstone mechanical obstruction found in the literature; the second being the patient reported by Hinekey¹⁴ who was 79 years of age. (2) The older

age group tolerates surgery well if adequately maintained in physiological balance and if the surgical procedure and anesthesia are carefully selected. (3) Thorough clinical observation should frequently reveal the obstructive mechanism in this older age group presenting signs and symptoms of intermittent small bowel stasis. (4) A direct surgical attack should be instituted after a preliminary decompression by trans-nasal duodenal suction and the establishment of fluid and electrolyte balance.

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90th ANNUAL SESSION KANSAS MEDICAL SOCIETY

May 9-12, 1949 — Topeka, Kansas

Make Hotel Reservations Now

"ACCIDENTAL MECHANICAL SUFFOCATION" and other types of sudden death in cribs, carriages, and bassinets.

"All that glitters is not gold,
Often have you heard that told."

The Merchant of Venice

Importance

"Accidental mechanical suffocation" is diagnosed frequently enough to make it familiar to both physician and layman. Although as a cause of death it is honored by tradition and esteemed by the public, recent work indicates that there is usually little justification for making such a diagnosis. There is an important reason for *not* making it. No other finding could possibly be more damaging to the child's parents, who must always thereafter carry a burden of self-reproach for their part in what is by implication a preventable death to which negligence contributed.

Some Recent Work

1. Wooley and McCammon¹ analyzed the atmosphere breathed by infants covered in various ways by different types of bedding. They were unable to demonstrate any changes in the normal O₂ and CO₂ content of the air except "after the addition of a rubber sheet, secured tightly at each border." Similarly, they tried to produce anoxemia by having infants sleep with nose and mouth tightly pressed against a pillow or mattress but were still unsuccessful "since the smallest was capable of rolling to obtain a clear airway, and the larger were generally out of accord with the position."

2. It has been pointed out frequently that when an infant dies suddenly for any reason, tetanic movements at death might be expected to enmesh it in its bedding.

3. The Coroner's Office of the Birmingham District in England² had some 318 cases of "accidental mechanical suffocation" reported to it from 1938-1944. Careful post-mortems established an entirely different diagnosis, usually a respiratory infection, in 294 of these; in the remainder, suffocation could not be excluded.

4. Werne and Garrow,³ from the office of the Chief Medical Examiner of New York City, reported their investigation over a 15-year period of 167 consecutive infants belonging to the group usually certified as "accidental mechanical suffocation." In no instance did their examination prove such a diagnosis. Most of the deaths could be attributed to overwhelming infections.

5. At one time or another, sudden death in infants, apparently healthy, had been found due to: bacterial and virus pneumonias, middle ear infections, adrenal hemorrhage, meningitis, congenital heart disease, brain tumours, inhalation of vomit, micrognathia, nasal obstruction from syphilitic lesions or adenoids, hemangiomas of respiratory tree, laryngeal spasm, islet of Langerhans hypertrophy, and chronic eczema. The usual pathology is an interstitial pneumonia, visible only microscopically.

Conclusion

1. Infants may die rapidly from the effects of fulminating infections, before localizing signs and symptoms have time to appear. This is a very much more frequent type of sudden death than "suffocation."

2. A DIAGNOSIS OF "ACCIDENTAL SUFFOCATION" FOR AN INFANT IN APPARENT GOOD HEALTH HAS LITTLE OR NO VALIDITY WITHOUT THE BACKING OF COMPLETE POST-MORTEM EXAMINATION, with studies of all the important organs, including the middle ear, and cultures of the blood and spinal fluid.

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CHEMOTHERAPY OF CANCER

The subject of the treatment of cancer by chemical substances is entering interesting stages of preliminary research development. An intensive search for potentially suitable agents is in progress at research institutes throughout the country and hundreds of chemicals have been screened, of which a few merit further investigation. Although these agents are not yet ready for general use in treatment of cancer patients, physicians should keep informed of recent, interesting developments. Because of lack of basic knowledge of normal and neoplastic growth, the research approach has been somewhat empirical and none of the agents act specifically on the neoplastic process. The effects of chemicals on various types of tumors grown in animals, in tissue culture, and on egg membranes are being determined. Usually years of research are necessary before a chemotherapeutic agent effective in animals can be trusted for clinical trial on patients. The main groups of substances being tested include chemicals related to nitrogen mustards, folic acid derivatives, inhibitors of cell division, and agents used in treatment of protozoal and bacterial infections.

The nitrogen mustards exert a cytotoxic effect that is related to the proliferative activity of tissues and is especially marked upon the hemopoetic, lymphoid and gastrointestinal epithelial cells. Although tested upon many tumors, best results have been obtained in Hodgkin's disease and to a lesser extent in lymphosarcoma and leukemia. Palliative effects upon adenopathy, fever, bone pain, splenomegaly and certain other clinical symptoms have been observed in many patients and are accompanied by toxic manifestations, including nausea and vomiting, lymphocytopenia, granulocytopenia and thrombocytopenia. Some patients with Hodgkin's disease resistant to roentgen radiation receive remissions from nitrogen mustard therapy. As compared with roentgen-ray therapy, ease of administration, availability in communities where irradiation may not be obtainable, and effectiveness in some cases resistant to roentgen radiation are among the advantages cited by the proponents.

Pteroyltriglutamic acid (teropterin) is a folic acid derivative which, although it may not appreciably affect the course of human tumors, is reported to relieve pain and provide a sense of well-being, cheerfulness and a state of mental alertness in many patients with advanced cancer. Some leukemic cells contain increased amounts of folic acid. Aminopterin, an anti-folic acid compound, is producing regression in approximately a fourth of the cases of acute leukemias of childhood in which it has been administered. Aninopterin has not yet been administered long enough to determine the length of remission which may be expected.

Urethane, after trial on different kinds of cancer and leukemia, is being tested in chronic myelogenous leukemia following radiation and in conjunction with stilbamadine in multiple myeloma.

The use of radiophosphorus has not established its therapeutic desirability over roentgen radiation. Radioactive iodine has some effect in those few cases of thyroid carcinoma which retain the ability of normal thyroid cells to concentrate iodine from the blood.

The administration of estrogenic hormones in prostatic cancer and androgens in premenopausal and estrogens in postmenopausal cancer of the breast is giving relief to some patients.

Although progress may continue to be slow, the results of cancer chemotherapy are encouraging so that we may eventually have one or more beneficial agents for treatment of some types of cancer.

PRESIDENT'S PAGE

Dear Doctor:

Just a few days ago I received a long distance call from one of the finest members of the Kansas Medical Society concerning his nephew, who had been seeking admission to a medical school for the past three years. This grand old gentleman said he didn't know Dr. Murphy, our new dean of the medical school, well enough to call him personally and ask that he give ear to the boy's entreaty. I assured the uncle that his nephew would find that Dr. Murphy not only had one ear but two, and both of them would be his for such an interview.

Dr. Murphy is definitely approachable and considerate of any problem that affects the present and the future of Kansas medicine. But, he is just one person trying to untangle the lines on some knotty issues that we must help with, if our objective is attained.

Quoting from Charles Graham's article in the Kansas City Times of December 30, 1948, concerned with the status of one of our state hospitals, "The great failure of this hospital rests in the failure of Kansas people and the Kansas legislature to provide funds for those things, and demand that those wants be filled, and *most important of all*, to provide the means by which medical talent, from doctors to attendants, might be obtained."

I overheard a remark the other day about "those fellows who run the Medical Society." It put me to wondering. Surely I am not running it. I never ran anything, not even my car. I just steer it. In all the time I have been interested in affairs of the Society, I cannot recall anyone who really ran the organization, and yet it does not run itself.

It has been said you can push a pen but a pencil has to be lead. The success of this Society depends upon such leaders as you. Without your leadership or your support of those who represent you, medical service in Kansas would be far below its present level. Much credit is due the personnel of our central office. Without their correlating efforts and constant diligence to duty we would exert a rather aimless course.

Some of us are like wheelbarrows. We keep going as long as we are pushed. Right now the people are pushing us for more services at the level of their ability to pay. Blue Cross has put into effect a new and very satisfactory system of payment to member hospitals, the first of its kind in the United States. Blue Shield expansion to suit public needs is an answer to a public that has been patient for a long time. And, speaking of patients reminds me of the professor who used to tell us that "a doctor who doesn't have patience doesn't deserve patients."

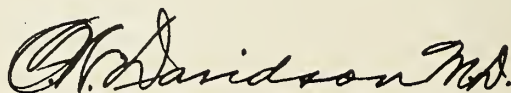
I would like to mention briefly a program for utilization of vice presidents and presidents-elect. No longer are they silent inactive title holders. Dr. Haddon Peck is spearheading the movement on this big Kansas Plan, the rural medical program. Dr. Roy Croson, first vice president, has charge of the National Physicians Committee enterprise in the state, and under his direction will be established a special committee to raise additional funds to complete the medical union building at the medical school. Dr. Harold Jones, second vice president, is in charge of the veterans' program and is our chairman of the postgraduate refresher course program.

Thanks a million for your response to the President's Fund. We will tell you more about its use at the coming meeting of all county society presidents and secretaries and committee chairmen of the state Society. I sincerely hope you will attend. Any member is welcome. You are the fellows who run the Society. May it be for the honor and dignity of the entire profession.

Tell your wife to start making plans to attend our 90th annual meeting in Topeka. Ask her to join the Auxiliary. Instruct your nurses and secretaries to attend the medical assistants' meeting.

With best wishes for 1949 to all of you, I am

Sincerely,



President.

EDITORIALS

Some Thoughts on John L. Lewis and Doctors

It is not often that a layman contributes material for a scientific publication such as the Journal of the Kansas Medical Society. However, the following article which appeared in the Kansas City Star on Sunday, December 12, 1948, is so excellent that the Editorial Board wanted to give each member of the Kansas Medical Society the opportunity of reading it. It was written by Mr. Bill Vaughan, who regularly contributes to the section of the Star entitled "Starbeams," and is reprinted with his permission.

We got to thinking today about a man we have known for some time, because it turns out now we never really knew him at all.

During the years we lived in his house we got used to the idea that he worked seven days a week, and that any one of those days was likely to start at seven in the morning and wind up the following Tuesday. It never disturbed us when the telephone rang at 3 a. m. and we could hear him getting up and dressing to go out. We thought that was what doctors were supposed to do.

And when we went on calls with him in parts of the city where people were sick but didn't have a nickel to pay him just as they hadn't had a nickel to pay his father before him, we just assumed that it was part of his job.

If our family didn't have as much money as those of some children whose fathers worked in stores, factories or courtrooms (this was in the days before the labor leader's boy was the richest kid in the block), there was still a certain satisfaction in knowing that one's father was a doctor. It seemed to us the most important profession in the world.

We even, in our innocence, were proud when our brother became a doctor.

But our eyes are open now. John L. Lewis has announced that doctors are "greedy, good-time Charlies who flock to girl shows, trip the light fantastic and drink an overflow of liquor."

How glad and sort of thankful it makes us feel that we were too lazy and stupid to get through premed.

We might have ended up in a conga line with the rest of the M. D.'s.

* * *

Another good point John L. Lewis has is where he tells about how the doctors are "geared to thinking in terms of a 10-year practice netting them enough money to become independent, and in fact, retire."

This doctor we know best has been at it thirty-five years. But we are keeping our eye on him, John.

Any time now we expect him to start out on that 10-year practice which is going to make him rich.

(By the way, did you read about that union president who retired the other day on \$20,000 a year, with a 20-dollar-a-day expense account and a free motor car? Don't know why these irrelevant things keep flashing through our mind.)

We heard not so long ago about one of these good-time Charlies who had been practicing for twenty-five or thirty years and finally bought a little farm and quit to sit out the rest of his time. Then the war came along and the younger doctors went off to see about it, and this old geezer tripped the light fantastic back to town and went to work taking care of sick folks until he greedily got himself a heart attack which killed him.

* * *

Of course, that sort of thing has no bearing on the matter. What hurts is how this doctor we thought we knew has fooled us. We never saw him take a drink. Maybe he wanted to, we don't know, but there was too much riding on his always being at the peak of his mental and physical form. Oh, he went to girl shows, all right. We remember when we were a boy he always took us to the Muny Opera in St. Louis, and sometimes he got to see most of one act before he checked in at the hospital by telephone and had to leave.

But we suppose he was secretly good-time Charleying around. John L. Lewis, who labors for the miners at a mere \$50,000 a year, says so.

* * *

There was a story we heard a long time ago in St. Louis about a rising labor leader in the Illinois coal mining district who got busted in the head with a dornick while riding in a scab taxi during a strike of the drivers, and about how he was taken out to the combination office and home of a young doctor who sewed him up. But we don't suppose John L. Lewis would know anything about that.

* * *

Anyway, we've had as much trouble paying our doctor's bills as the average \$50,000-a-year labor leader, we guess, and now that we know the money has all been thrown away on booze and girl shows and dancing, we'll go along with John L. Lewis on this business of socializing medicine.

We'll even go farther. We are in favor of socializing union bosses so that the government would appoint them and the union would take the one the government said it was to have, and he would be paid \$25 a week and carfare. And there would be a provision that neither doctors nor labor leaders would be allowed to take their wives out dancing, see a show or drink a beer. O. K., John?

Narcotic Addiction

Narcotic addiction has decreased sharply since the passage of the Harrison Act in 1914. At that time there were up to 200,000 addicts in the United States, most of them women, while today there are 48,000, mostly men. Leaning on the strong arm of the law to solve those problems, it is understandable that the medical profession has almost ceased to have an interest in the subject.

Perhaps that is not all to the good. We rarely see an addict today but should be prepared to act properly if this happens. The occasional physician who is tempted to treat such an individual as a private patient will probably experience a stormy and disappointing adventure and will almost certainly come to grief with federal authorities in the process.

Withdrawal of the drug, by far the simplest part of the treatment, should not be undertaken outside a well established hospital. Following this the patient must undergo a long period of rehabilitation to insure even a mathematical chance of success. Patients may be admitted through the Surgeon General of the United States Public Health Service to hospitals at Lexington or Fort Worth, either by commitment or on a voluntary basis. Voluntary patients are asked to pay one dollar a day but this may be waived where advisable or necessary. Generally speaking, the physician will spare himself trouble and will render a service to his patient if he suggests treatment under government supervision.

A second factor to be considered concerns the possibility of fostering addiction through the use of narcotics as an adjunct to medical care. This is infrequent because by far the greatest number of addicts are made through contact with persons already addicted, but the possibility should be borne in mind, particularly when prescribing narcotics to persons who demonstrate psychoneurotic disorders. The addict is almost invariably a person who has experienced emotional difficulties. He might welcome narcotics as an escape from his problems, so whoever provides the opportunity for their use at least shares in the responsibility.

There is also a third consideration. A wide variety of drugs capable of causing addiction lie outside federal control. With reference to most of these Kansas is also without jurisdiction except in a highly perfunctory manner. Among them are the barbiturates, bromides, alcohol, peyote, amphetamine and possibly marijuana. Addiction embraces three phenomena: tolerance, or the necessity of increasing dosages over a period of time to maintain the original effect; physical dependence, or the necessity of continuing the drug to avoid the appearance of illness, called an abstinence syndrome, and habituation which includes euphoria, relief of pain, etc.

The above named may involve only part of these phenomena and to a lesser degree perhaps than the true narcotic drugs, but in one way or another their continued and indiscriminate use is dangerous. Taking alcohol as an example (and there is a closer relation to alcohol addiction and narcotic addiction than is generally acknowledged), tolerance and habituation definitely develop. There is little doubt that a true abstinence syndrome is also present, so the chronic habitual drunkard is as acutely in need of care as is the confirmed narcotic addict. If the professor of sociology at Yale University is correct, there are three and one-half million confirmed alcohol addicts in this nation in need of attention.

And then there is the problem of the barbiturates. Continuous use of these products is not frequently encountered in the average practice, but those persons who work under the Harrison Narcotic Act are genuinely concerned. They strongly urge Kansas to pass regulatory laws and have models they will gladly submit for study.

With our legislature currently in session it seems the medical society should face the problem now and accept its moral obligation in recommending a solution that will work. This would be an appropriate time to advise control over many dangerous drugs not covered as narcotics, and particularly since the question of liquor control is being reviewed would this be an opportunity to pioneer in such fields as the definition of drunkenness, driving while intoxicated and in sound care for the habitual drunkard.

Farm Bureau Supports Medicine

The president-elect of the Kansas Medical Society and the executive secretary were invited to visit with the American Farm Bureau Federation at its 30th annual convention held in Atlantic City during the middle of December. Speaking only in behalf of the Kansas Medical Society, they explained to delegates from many states details of the Kansas Plan and the hazards involved in a compulsory, federally-operated medical care program. The 100 and more delegates from Kansas were enthusiastic in supporting the Kansas Plan. They explained this program to delegates from other states and were directly instrumental in preparing a resolution on rural health that was first approved by the resolutions committee and later was passed without dissent by the 10,000 and more delegates present. Because of its importance the entire resolution is reprinted below:

The quality of American medical service is very high. Unfortunately, American medical service at its best reaches only a relatively small part of the rural areas of the country. The shortage of physi-

cians, hospitals, and other medical facilities in the rural areas is not due to less need for medical care than in cities. The primary factors which most influence adequate medical facilities and which attract physicians are community environment and economic opportunity.

There is a wide gap between existing medical knowledge and the health practices in many rural areas. Rural people must first know their existing facilities and whether or not they are adequate. They must know the meaning of high standards in hospital and medical care. They must be taught the advantages of budgeting the costs of medical need as they do other household expenses. They must know the significance of health hazards around the farm home as they pertain to disease, including the relationship between animal diseases and human health. They must know what services offered by public and voluntary agencies are available to them, and they must discover their own health needs and formulate their own program.

For this reason we heartily commend the health programs already under way in some of our State Farm Bureaus, and urge other states to follow as soon as practicable. We also recognize promise in the long-range health education program carried on by the Agricultural Extension Service. We urge the Land-Grant colleges to expand this program to the extent that they have an extension health education specialist on their staffs.

We suggest that our State Farm Bureaus give serious consideration to the desirability and possibility of offering scholarships whereby physicians, surgeons, dentists, and nurses will be encouraged to establish themselves in rural areas. We believe the problem of improved health can best be met by the voluntary organization of cooperative health associations which will encourage people to take advantage of the services available for any medical or dental care which they may require.

We stand ready to cooperate with the rural health committee of the American Medical Association and other groups in providing better voluntary medical care for rural people. We urge the continued interest and cooperation of the states in cancer, tuberculosis, venereal disease, polio, crippled children, heart and rheumatic fever programs. We also endorse the American Red Cross National Blood program and recommend active participation by our Farm Bureau members. We favor voluntary plans providing medical, health, dental, and hospital insurance. We urge that facilities of medical schools be expanded, and every effort be made otherwise to train more physicians, surgeons, dentists, nurses, technicians, and general practitioners and public

health doctors. We recommend the full cooperation of rural people with our established health units and existing health programs, including immunization, clinics, nutrition courses, and home nursing. We believe greater emphasis should be given to preventive medicine. We suggest that in states where permissive legislation for the creation of public health units does not exist, State Farm Bureaus secure the enactment of such legislation.

We favor reasonable appropriations for grants-in-aid to states for maternal and child health programs, and also to assist states in the expansion of needed public services and facilities. To the extent Federal grants are needed by way of assistance, such grants should be made to states on the basis of need, with state governments responsible for the allocation and administration of these funds.

The American Farm Bureau Federation has consistently supported the Hill-Burton Hospital Construction Act, and we will support the continuation of this Act and appropriations necessary to achieve the objectives of the law. The American Farm Bureau Federation urges the state Farm Bureaus to cooperate in the administration of the Act in their respective states. In the administration of the Act, agriculture must have adequate representation on national and state advisory councils.

A.M.A. House of Delegates Meeting

Editor's Note: Although a complete report of the meeting of the House of Delegates of the American Medical Association may be found in recent issues of the Journal of the A.M.A., those who represented Kansas at the sessions were asked to prepare a report for publication in the Kansas Journal. Delegates from this state are Dr. Philip W. Morgan, Emporia, and Dr. John M. Porter, Concordia.

The interim session of the A.M.A. held in St. Louis from November 30 to December 3, 1948, was a successful meeting in every respect. The registration totaled 4,526 with 2,200 Fellows registered. In the first two days the registration of 1,896 at Cleveland, the only previous interim session, had already been surpassed. There were many members of the Kansas Medical Society present, particularly after December 2 when the Western Surgical Society also met in St. Louis.

The scientific sessions, which emphasized general practice throughout, were divided into general and special sessions. The mechanics of the latter have not yet been worked out satisfactorily and there was some crowding and confusion. With more experience, and particularly more idea of what to anticipate in the way of attendance, these smaller, less formal sessions should be extremely valuable. The subject matter and speakers were extremely well chosen.

The scientific exhibits were extensive and varied with demonstrations of interest to anyone in medicine. Particularly good were the demonstrations of laboratory processes by the St. Louis Pathological Society. Complete and competently staffed laboratories allowed visiting physicians to have and see a variety of studies done on their own blood. Emphasis was placed, however, on the fact that the laboratory is not a substitute for case history and physical examinations but rather an aid in differential diagnosis. Four booths dealt with aspects of diabetes and case finding in large surveys by a simple rapid screening type of blood test that was demonstrated.

Kansas was represented by three exhibits: Dr. J. A. Wheeler of Newton on "Western Equine and St. Louis Viruses," the Halstead group on "Conservative Pelvic Surgery," which had been shown in Chicago, and Dr. Graham Asher, Dr. L. F. Steffen and Dr. Franklin D. Murphy on "Latent Tetany."

In addition to all this scientific material there were excellent and very popular television set-ups, medical movies, over 100 commercial exhibitors and the usual entertainment.

Dr. P. W. Morgan, Dr. J. M. Porter and Oliver Ebel, as well as several other interested members of the Kansas Medical Society, were present throughout the meetings of the House of Delegates. This convened promptly on the morning of November 30, and with a new set of officers the business was handled rapidly and efficiently. Dr. Morgan, as chairman of the Committee on Rules and Order of Business, had a part in the function of this improved organization. Reports from officers of the Association, the chairman of the Board of Trustees and the various councils were presented. Most of these reports had been published prior to the meeting but there were many supplementary reports which had to be presented in person. In addition to the usual reference committees the speaker appointed two special committees, one on Medical Service and Prepayment Insurance Plans and the other on Emergency Medical Service.

Dr. Henderson, chairman of the Board of Trustees, reported that there had been 23 state nominations for the honor of being the outstanding general practitioner of the year. In his report he emphasized what the Kansas committee had already found in reviewing nominations from the county societies, that many biographies were entirely inadequate and that the manner in which data were presented was almost as important as the characteristics of the man described. The Board of Trustees nominated three men from this group, one from South Dakota, one from Louisiana and one from South Carolina. By vote of the House, Dr. W. S.

"Buck" Pressly of Due West, South Carolina, was elected. On motion of Dr. Vest of West Virginia the House voted to award a certificate of merit and a medal to Father Alphonse Schwitalla of St. Louis for distinguished service by a layman in maintaining the ideals of medicine. The medals for Dr. Pressly and Father Schwitalla were presented later in an open meeting.

Many items of new business and innumerable resolutions were presented to the House and referred to appropriate committees. Tuesday afternoon was devoted to the presentation of those resolutions and to an additional report by Dr. Henderson of the Board of Trustees. Both were promptly referred to reference committees.

The various committees met throughout Tuesday evening (and some far into the night) and Wednesday morning. Probably the largest attendance was at the meeting of the special committee which considered the advisability of a national amalgamation of the Blue Cross and Blue Shield organizations. The reports otherwise were in the main non-controversial.

The work of Dr. George Lull as general secretary of the A.M.A. again came in for an expression of confidence and approval. The Council on Scientific Work was increased from a membership of five to seven because of the added work entailed by the two meetings and recently added sections. The time allotted to the various sections at the annual meeting will be based largely on past attendance. Approval of "Diabetes Week" in an attempt to locate unknown diabetics was granted. Attempts were made to define "Public Health" and the House voted approval of local health units at the county level.

The problems of financing medical education were reported and discussed at length, and it was agreed that federal aid in this field should be considered only as a last resort. The recent emphasis on general training in medical education was maintained and expanded.

Deferment of pre-medical students and internes for a matter of two years was recommended to Selective Service authorities. Consideration of Army and Navy medical services and a reduction of the number of non-service patients was recommended. The inequalities in rank of the various surgeons general (Army, Navy and Air) were pointed out and a correction of this discrepancy was urged. A Civilian Advisory Committee is under consideration and has the approval of Secretary Forrestal. It was suggested that young doctors who have been trained at federal expense but have not had active duty should be required to serve for a period with the armed forces. In view of the unpaid services rendered by draft boards throughout the nation, the House reversed

its previous recommendations asking for pay for selective service examinations.

Rebates of all kinds in the practice of medicine were severely condemned. Legal action against violations was urged and correction of inadequate laws in this regard suggested. It was also recommended that the accounts of any member suspected of profiting by rebates be audited by local county organizations when complaints were made to them. Complaints about compulsory staff attendance were met only with sympathy.

In a closed session (open to members of the A.M.A. but not the public and the press) the House voted an expression of confidence in the Board of Trustees, urged them to expand the Washington office of the A.M.A. and to disseminate information regarding the practice of medicine. To implement this an assessment of \$25 per member of the A.M.A. (not per Fellow) was voted. The action on this was unanimous.

The special committee which had held extensive hearings on prepayment insurance reported unfavorably on the national combining of the Blue Cross and Blue Shield. They recommended instead continuation of these programs at state levels and the formation of a national enrollment agency. There had been extensive discussion of these problems prior to their report to the House and while the House rejected a motion to cut off debate, these recommendations were adopted unanimously without further debate.

The House adjourned late Wednesday afternoon, allowing the delegates some time to attend the scientific exhibits available.

* * *

Several conferences were scheduled at St. Louis immediately preceding the mid-winter meeting of the House of Delegates of the A.M.A. On Saturday, November 27, the first annual Public Relations Conference was held at the Statler Hotel. Numerous speakers presented their views, but outstanding was a paper by the director of public relations of the Standard Oil Company of Indiana, who told of the success of their program and cited the comparable situation in which the medical profession now finds itself.

On the two days following, the annual Conference of Secretaries and Editors convened at the Statler Hotel. Included in the program was a journal clinic during which four representative medical journals were analyzed from point of view of typography, make-up, editorial comment and general interest. Symposiums were conducted on prepaid medical care plans, the radio as a public relations medium and medical legislation. Guest speakers discussed

the atomic bomb, future prospects relative to compulsory health insurance and osteopathy.

The other meeting held at this time was the Grass Roots Conference for county secretaries on Tuesday evening, November 30. On this occasion, although the general topic was the responsibilities of county societies, specific attention was once again given to public relations and to the threat of federal control of the practice of medicine.

90th Annual Session, May 9-12, 1949

The 90th annual session of the Kansas Medical Society will be held at Topeka beginning May 9 through May 12, 1949. As usual, the golf and skeet tournament will be held on Monday afternoon preceding the convention. As usual, the three-day scientific session will be filled with papers presented by prominent physicians from throughout the United States. Topics will be varied and are being selected with a view toward interesting every physician in the state of Kansas. As usual, there will be exhibits, technical and scientific, which the profession will be invited to see.

The 90th occasion for a meeting of the Kansas Medical Society will be memorable because of several departures from the type of program to which members are accustomed. By way of example, one scientific session will be divided into three separate groups on surgery, internal medicine, and obstetrics. In each section a panel of Kansas physicians will present the program. It is felt that this will be of especial interest because the papers presented by Kansas physicians will discuss local problems. A second variation that will be a welcome addition to the program will be a period devoted to the social, political, and economic phases of the practice of medicine. Authorities in their respective fields have been invited who will present to the physicians of Kansas authentic information regarding present-day problems.

The annual banquet held in connection with the 90th annual session will also be an occasion long remembered by those who will attend. In addition to an inspirational speaker of national reputation there will be a presentation of the first annual general practitioner's award to the Kansas physician selected for this honor.

Future issues of the Journal will carry more specific information, but at this time it is important to remind members planning to attend that they write now for reservations. The two major hotels in Topeka are the Jayhawk and the Kansan. Arrangements have been made to set aside as many rooms as possible for this occasion but, as always, reservations will be difficult to obtain unless applied for at present. The dates again are Monday, May 9, through Thursday, May 12, 1949.

Case Reports from the University of Kansas Medical Center Clinical Pathological Conference

Edited by G. R. Shepherd, M.D., and M. H. Delp, M.D.

Case Presentation

This 11-year-old female died about 36 hours after admission. The patient first became ill 10 months prior to admission with a sore throat which frequently recurred along with a questionable low-grade fever and migratory joint pains characterized by swelling and limitation of motion. By the fifth month of her illness, the patient was bedridden and had orthopnea, marked anorexia, and had lost several pounds. During the fifth month, a severe sore throat with marked cervical adenopathy occurred.

She was seen by an osteopath who advised hospitalization for tonsillectomy. The patient nearly succumbed after only two or three minutes of anesthesia. Thereafter, she was more critically ill, with more severe orthopnea and development of marked edema of the lower extremities and ascites. This apparently subsided somewhat with bed rest. About three weeks before admission, the patient was taken to a medical doctor who diagnosed the Tetralogy of Fallot and possible rheumatic fever. He hospitalized her, performed a paracentesis and attempted to digitalize the patient with powdered leaf (exact amount not known). The patient failed to improve and hospitalization at the Medical Center was advised.

Physical examination showed an emaciated, seriously ill girl in obvious respiratory distress—rate 35. The skin was dry and sallow, with circumoral cyanosis. The hands and feet were cold and moderately cyanotic. The abdomen was distended and had a fluid wave. The liver was down five fingers and moderately tender. There was two plus pitting edema of the feet and ankles. Body weight was 62 pounds. The lungs were clear on examination, but the heart was enlarged to the mid-axillary line in the sixth interspace, with bounding point of maximum impulse. The pulse was fast, 120 per minute, and thready. The blood pressure was 100/60. A loud, harsh systolic murmur was heard over the entire precordium but loudest at the mitral area with transmission to the axilla and left posterior chest. There was no arrhythmia nor any definite thrill.

X-ray of the chest showed marked cardiac hypertrophy... displacement of the esophagus to the right and posteriorly... no pulmonary fluid apparent but increased vascular markings indicating heart failure.

E.K.G. was interpreted as showing sinus tachycardia, right axis deviation, auricular strain, probable right ventricular strain, and myocardial abnormality.

Laboratory reports, in summary: RBC 4,790,000 WBC 25,200 Hb 11.5 grams per cent. Differential: 81 per cent polys, 14 per cent lymphs, 4 per cent monocytes. Sedimentation rate: 10 mm./hr. Hematocrit: 45 cc. No blood chemistry obtained. Bacteriology: nose and throat culture, normal flora. Urinalysis: acid; sp. gr. 1.020; albumin heavy trace; 8 to 10 hyaline casts/low power field; few bacteria.

In the hospital after admission, the patient seemed to show some improvement; her dyspnea became less and the cyanosis disappeared. She was placed on a salt-poor diet, and ate a good meal the night of admission. Purodigen was given, 0.05 milligrams every four hours.

On the morning of the day following admission, the patient vomited and immediately became markedly dyspneic again with gradually increasing cyanosis. She was placed in an oxygen tent. Vomiting continued during the afternoon and a slow intravenous drip of whole blood and 10 per cent glucose, 200 cc. of each, was started for shock. By late afternoon, the patient was becoming markedly apprehensive and dyspneic. An Aminet suppository was given by rectum without relief. By 10:00 p.m. the patient was irrational; moist rales were heard in both bases, marked dyspnea continued, and cyanosis increased until time of expiration at 4:00 a.m. The total urinary output during hospitalization was 200 cc.

Differential Diagnosis

Francis Reardon (Medical Student): There are three entities which I consider as possible causes of the failure. These are a congenital heart defect with superimposed endocarditis, a congenital heart defect with superimposed rheumatic fever, or a simple case of rheumatic fever. Congenital heart lesions may be temporarily ruled out because the body was emaciated rather than underdeveloped, there was no clubbing of the fingers, and no history of cyanosis before the illness began. There are no such findings of subacute bacterial endocarditis as petechiae. A classical history of rheumatic fever is given, but the absence of increased sedimentation rate bothers me. Edema, dyspnea, and ascites suggest a severe grade of heart failure. The loudness of the murmur and the enlargement of the right auricle suggest severe damage to the mitral valve. Of course, because of the rapid course, there may have been a bacterial endocarditis, but my diagnosis is rheumatic pancarditis, severe mitral valve damage with death

due to heart failure. There may have been a terminal nephritis.

Dr. Miller (Department of Pediatrics): This case is obviously one of acute rheumatic fever from the beginning to the end. The child had a rheumatic pancarditis and there will probably be observed Aschoff bodies in the myocardium. The case was mistreated from the beginning, particularly in regard to the tonsillectomy. There is no reason to take such a sick child in to perform a tonsil removal under these circumstances. That is not to say that I am against tonsillectomy in every case of rheumatic heart damage, but this child was acutely ill. You don't expect an elevated sedimentation rate this late in the course, nor do you need one for the diagnosis with such other evidences of rheumatic damage to the heart as we find here. The digitalis medication is all right, in answer to the question Mr. Reardon raised about it, even though the valve is severely injured. We didn't expect this child to die so soon after admission. The pulmonary congestion developed extremely rapidly. She should have been placed in the oxygen tent immediately after hospitalization.

Summary of Pathological Changes

GROSS PATHOLOGY, DR. STORSTEEN:

- Clear fluid in all body cavities;
- Many fibrous adhesions between heart and pericardium;
- Petechial hemorrhages in epicardium;
- Dilatation of heart, weight 250 grams (normal 122 grams);
- Verrucae seen on all valves except the pulmonary;
- No great distortion of any valve;

MacCullum's patch noted;

Liver weighed 800 grams, mottled and congested in appearance;

Congestion of lungs;

Spleen fibrotic.

MICROSCOPIC PATHOLOGY, DR. BOLEY:

Myocardium showed Aschoff bodies and collections of monos and polys;

Atrial endocardium edematous;

Fibrinoid degeneration and vegetations of tricuspid, aortic, and mitral valves;

Lungs show thickening of alveolar walls with deposits of monos and polys therein and serum in alveoli;

Liver shows congestion and extensive necrosis of central zones around central veins.

Pathological Diagnosis

Dr. Boley: Acute rheumatic fever, active pancarditis, organizing pericarditis, myocardial failure terminally.

Discussion

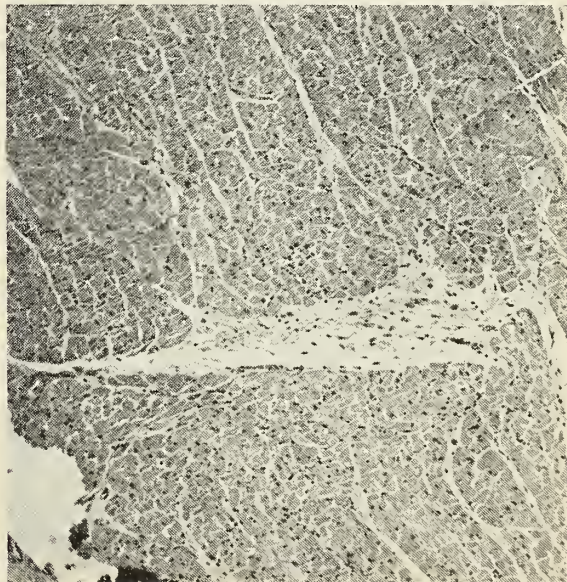
Dr. Wahl: The Aschoff bodies, though not absolutely typical, are good examples. The impressive features are the degenerative changes in the myocardium, the striking degeneration and congestion of the liver, and the relatively little distortion of the valves.

Dr. Delp, Chairman: Dr. Douglas, will tell us some of the features of digitalis therapy in such cases?

Dr. Douglas (Department of Medicine): Rheumatic heart failure occurs in one of three ways: (1) myocarditis, or (2) through a disturbance of



1. Above photomicrograph shows the endocardial vegetation in a cardiac valve.



2. Above photomicrograph shows a typical Aschoff body in the myocardium.

rhythm, or (3) by failure of the myocardium by mechanical strain. In children, the process is usually one of acute myocarditis.

There is some controversy as to the value of digitalis in treating congestive failure in rheumatic fever. Certainly, it is not indicated simply because there is an acute carditis. And toxic effects often occur in children before complete digitalization can be carried out.

Digitalis is of little benefit with pancarditis with symptoms of heart failure. Digitalis is of slightly more value in cases showing both right and left heart failure (in about one out of ten cases there is benefit). In 25 per cent of the cases showing right heart failure alone, digitalis is of value. In cases of carditis with fibrillation, about 50 per cent respond to digitalis. And, of course, in those cases with heart failure and without evidence of active infection nor carditis, digitalis is of maximum value and helps as many as in any other case of non-carditis failure.

The form of the digitalis makes no difference, as long as the proper amount is given. Digitoxin is very satisfactory. The one-dose method cannot be used safely, nor can a set amount of total digitalis dose be used on all patients, for digitalization. There is a certain amount of risk in the one-dose method. Proper dosage is that which is enough but not too much. No one total dose figure can be used for digitalizing children, despite Gold's contention that 1.2 mgm. digitoxin is proper for all hearts in either children or adults. There is no substitute for a thorough knowledge of the action of digitalis.

Question: Should more active diuresis have been attempted?

Dr. Cochran: Probably so. Active diuresis with sodium restriction, acid salts, and mercurials so useful in middle-aged heart failure will probably be carried over into the treatment of juvenile heart failure. Mercuhydrin is the mercurial of choice, given either intravenously or intramuscularly. There wasn't enough time in this case to get the effect from acid salts nor even to give them.

I think that increasing the blood volume by intravenous blood and glucose was not necessary since it is already relatively too great. Dehydration of course would indicate increasing fluids.

The actual dose of digitalis is variable and where unknown amounts of digitalis have already been ingested before admission, we give doses every four to six hours so that the effect of each dose can be judged before the next one is given.

Dr. Delp: Dr. Cochran, how do you determine

the myocardial damage and the activity of rheumatic fever? The EKG can be misleading.

Dr. Cochran: The EKG is notoriously unreliable for discovery of damage and rheumatic activity. At times, it seems impossible to separate out the two components, the degree of rheumatic activity and the amount of damage to the heart. The use of streptolysin hemolysin titer might be of some value in determining the degree of rheumatic activity. While not specifically determining the myocardial damage, it would serve to eliminate other causes of myocardial failure.

Dr. Miller: It's very simple. Every child under 15 years with heart failure and a diagnosis of rheumatic fever has myocarditis. All the pathologist has to do is confirm it later.

Dr. Douglas: That remark might lead one to conclude that every case of juvenile heart failure is due to rheumatic fever, and that every case of heart failure is hopeless and is going to die. Of course, this was probably not intended. The real situation is that while most cases of childhood heart failure are due to rheumatic fever, there are other causes. And, of course, the outlook is certainly not hopeless in rheumatic myocarditis, for many of these children can be saved by such therapeutic measures as bed rest, digitalization when necessary, early oxygen administration when indicated, and so on. I would like to ask if there are any contraindications to the use of opiates in these children?

Dr. Miller: Opiates can be used and this girl should have had morphine.

Dr. Sloan Wilson: Can mercurials be given with impunity in such a case as this without risk of getting overdigitalization when fluids diminish, from the unknown amounts of digitalis previously administered and possibly held in the edema fluids?

Dr. Cochran: That has been overemphasized. While it is theoretically possible, I have not seen such an effect following diuresis.

Summary

We have a case of congestive failure, the result of acute rheumatic pancarditis, terminating fatally. We can say that congestive failure in children is at least very frequently the result of active rheumatic fever but not invariably so. The treatment of congestive heart failure in children is unique only because of this special frequency. The ordinary procedures such as use of digitalis, sodium restriction, mercurials, diuresis, oxygen, and sedation apply alike.

A History of the Current Osteopathic Case in Kansas

Although the case filed by osteopaths in Kansas against the Governor and the Attorney General of this state has not yet been concluded, a decision was recently rendered in favor of the defendants. Following the decision the plaintiffs immediately filed a motion for a new trial and to set aside findings of fact and conclusions of law rendered by the court. This is a preliminary step to be taken before an appeal may be made to the United States Supreme Court. The plaintiffs have until January 5, 1949, to file a brief in support of their motion. The defendants then have until February 1, 1949, in which to file a reply. The further course of this law suit will be determined after the court announces its decision on this new motion.

Complaint

On October 30, 1947, Robert L. NeSmith, attorney in Wichita, and E. H. Hatcher, attorney in Topeka, filed a complaint in the District Court of the United States for the District of Kansas, Second Division. It was listed as Number 3252. The entire complaint, as originally filed, reads as follows:

This action arises under and pursuant to Section 266 of the Judicial Code; U.S.C. Title 28, Section 380, to restrain and permanently enjoin the defendants, Frank L. Carlson as Governor of the State of Kansas, and Edward F. Arn as Attorney General of the State of Kansas, from the enforcement, operation, or execution of the restriction in Section 2 (now 65-1201 G.S. 1935) and all of Section 10 (now 65-1005 G.S. 1935) of Chapter 290 of the Laws of 1913, for the reason that said purported statute is void, and in violation of, and repugnant to the 5th Amendment, and Section 1 of the 14th Amendment to the Constitution of the United States.

Plaintiffs, and each of them, are regularly licensed osteopathic physicians under and pursuant to the Laws of the State of Kansas. Plaintiffs' residence and post office addresses are as follows: B. L. Gleason is a resident of Larned, Pawnee County, Kansas; C. V. Moore is a resident of Medicine Lodge, Barber County, Kansas; O. R. Muecke is a resident of Pratt, Pratt County, Kansas, and Lawrence A. Moore is a resident of Herington, Dickinson County, Kansas.

The defendant, Frank L. Carlson, is the duly elected, qualified and acting Governor of the State of Kansas, and that the defendant Edward F. Arn, is the duly elected, qualified and acting Attorney General of the State of Kansas, each reside, and their respective post office address is Topeka, Shawnee County, Kansas.

The legislature of the State of Kansas enacted Chapter 290 of the Laws of 1913, effective the 17th day of March in said year, the title of which reads:

"Concerning the practice of osteopathy and providing for a State Board of Osteopathic Examination and Registration."

Section 1 to 7 inclusive, of said Chapter 290, (now 65-1201 to 65-1206, G.S. 1935) pertained exclusively to the practice of osteopathy in all its branches. Section 1 of said Chapter created the Kansas State Board of Osteopathic Examination and Registration (now 74-1201 G.S. 1935). Section 2 of said Chapter (now 65-1201 G.S. 1935) fixed the minimum educational and professional requirements as applied to osteopathic physicians, and in part is as follows:

"...After June, 1915, said applicant shall have a diploma of graduation from a high school, academy, state normal school, college or university, a certificate of examination for admission to the freshman class of a reputable literary or scientific college, approved by the aforesaid board, before taking up the study of osteopathy, and shall have graduated, after personal attendance from an osteopathic school or college of good repute wherein the course of study shall consist of at least four years of eight months each in each separate year; provided, however, that if any applicant shall have completed a course of study in any such osteopathic school or college, consisting of three years of nine months each, and a post-graduate course of at least five months, aggregating at least thirty-two months, such course shall be accepted in lieu of the full period of four years of eight months each provided for in this act. The Board shall subject all applicants to a practical examination, as to their qualifications for the practice of osteopathy, in writing, in the subjects of anatomy, physiology, physiological chemistry and toxicology, pathology, diagnosis, hygiene, obstetrics and gynecology, surgery, principles and practice of osteopathy, and such other subjects as the Board may require. This may be supplemented by other practical examinations such as the board may by rule determine..."

The Board was authorized to issue to a successful applicant:

"...A certificate granting him the right to practice osteopathy in the State of Kansas, as taught and practiced in legally incorporated colleges of osteopathy of good repute."

Meaning:

"Osteopathic physicians...are limited to the practice of osteopathy...as generally known and understood, and as taught, in osteopathic schools or colleges, of good repute, in 1901 and 1913."

Section 3 (now 65-1202 G.S. 1935) of said Chapter defined an osteopathic school or college of good repute as:

"The words 'osteopathic school or college of good repute', whenever used in this act, shall be deemed and taken to include only such schools or colleges of osteopathy as are legally incorporated, and which prescribe a course of study covering the time provided for under the provisions of this act, and which shall instruct in all the branches of study in which examinations are required for license under the provisions of this act, and shall require the personal attendance of the student throughout the course, and the requirements of which shall be in no particular less than those prescribed by the American Osteopathic Association."

The educational and professional requirements as provided in the foregoing statute, were solely and only for the following purposes:

(a) Simply a list of subjects in which an applicant for a certificate to practice osteopathy was required to take an examination. *State v. Gleason*, 148 Kan. 1. (b) Merely for the purpose of giving the (osteopathic) student body a knowledge of what those who practiced medicine and surgery believed. *Burke v. Kansas State Osteopathic Association*, 111 Fed. (2d) 250.

The restrictions thus placed by the said statute upon the use of the knowledge and skill acquired by the plaintiffs, and each of them in complying with the educational demands of the statute as provided in Section 2 of said Chapter 290, is unreasonable, arbitrary and capricious; void as against public policy, detrimental to the public health; discriminatory, and in violation of the 5th Amendment and Section 1 of the 14th Amendment to the Constitution of the United States.

Sections 8 to 15 inclusive, of said Chapter 290 (now 65-1001 to 65-1008 G.S. 1935) pertained to the practice of, and with slight amendments, is now the law under which the allopathic physicians are practicing their profession in the State of Kansas.

The said statute makes no pre-educational requirement whatsoever, as applied to the allopathic physicians, but does require proof that he is of good moral character and:

"...Satisfactory evidence that he has devoted not less than three periods of six months each, no two within the same twelve months, or if after April 1st, 1902, four periods of not less than six months each, no two in the same twelve months, to the study of medicine and surgery. All such candidates, except as hereinafter provided, shall submit to an examination of a character to test their qualifications as practitioners of medicine or surgery, and which shall embrace all those topics and

subjects a knowledge of which is generally required by reputable medical colleges of the United States for the degree of Doctor of Medicine."

Each of these plaintiffs has complied with all statutory educational and pre-educational requirements and demands imposed upon the osteopathic physicians; graduated from osteopathic colleges and schools as defined by said statute; was subjected to, and successfully passed an examination in all subjects demanded by Section 2 of said Chapter 290; and in addition thereto, was examined in, and successfully passed an examination in the subjects of bacteriology, comparative therapeutics, biological chemistry, embryology, histology, neurology, neuro-anatomy, pharmacology, laboratory diagnosis and hematology, ear, nose and throat, immunology, pediatrics, x-radiance, diseases-acute infectious, diseases of respiratory system, diseases of circulatory system, diseases of gastro-intestinal system, diseases-tropical and parasitic, and clinics; all as required by the Kansas State Board of Osteopathic Examination and Registration, and as required by said statute; is fully competent and qualified, and was so recognized by the State of Kansas for 25 years, to practice osteopathy in all its branches which has, since osteopathy was founded, included the use of anesthetics, antiseptics, antidotes for poisons, narcotics, obstetrics, surgery with instruments and the administration and use of all modern methods in the treatment of the sick and injured.

Each of said plaintiffs has been enjoined in the State Courts of Kansas solely and only upon the ground that in the practice of osteopathy in all its branches, they, and each of them, had violated Section 10 of said Chapter 290 of the laws of 1913 (now 65-1005 G.S. 1935) that part of said Section 10, pertinent to this action is as follows:

"Any person shall be regarded as practicing medicine and surgery within the meaning of this act who shall prescribe, or who shall recommend for a fee, for like use, any drug or medicine, or perform any surgical operation of whatsoever nature for the cure or relief of any wounds, fracture or bodily injury, infirmity or diseases of another person, or who shall use the words or letters 'Dr.' 'Doctor,' 'M.D.', or any other title, in connection with his name, which in any way represents him as engaged in the practice of medicine or surgery, or any person attempting to treat the sick or others afflicted with bodily or mental infirmities, or any person representing or advertising himself by any means or through any medium whatsoever or in any manner whatsoever, so as to indicate that he is authorized to or does practice medicine or surgery in this state, or that he is authorized to or does treat the sick or others afflicted with

bodily infirmities, but nothing in this act shall be construed as interfering with any religious beliefs in the treatment of diseases: Provided, that quarantine regulations relating to contagious diseases are not infringed upon. This act shall not apply to any registered osteopathic physician..."

The above proviso as applied to osteopaths:

Meant no more than that one who desired to practice osteopathy should not be required to make application to the state board of medical registration and examination and have that board pass upon his qualifications and issue to him a certificate to practice osteopathy. *State v. Gleason*, 148 Kan. 1.

Said Section 10, not only denies to these plaintiffs the right to compensation in lawfully using the knowledge and skill the legislature demanded in Section 2 of said Chapter 290, that said plaintiffs acquire, but said Section 10 precludes these plaintiffs from practicing their profession in any respect whatsoever, if the statute does permit plaintiffs to practice the healing art in certain respects, the restrictions in said statute are such as to preclude plaintiffs from using fully the knowledge and skill they, and each of them possess in practicing osteopathy in the approved manner, and as taught and practiced in legally incorporated colleges of osteopathy of good repute, all of which is void, as against public policy, detrimental to the public health; unreasonable use of the police power of the state, discriminatory, and in violation of the 5th amendment and Section 1 of the 14th Amendment to the Constitution of the United States.

Said statute confers a special privilege upon the allopathic profession in Kansas, and the same has been, and is being used to boycott industries who sell supplies to these plaintiffs and other members of the osteopathic profession, and said act is void, as against public policy, detrimental to the public health, unjust discrimination against these plaintiffs, and other members of the osteopathic profession, and is in violation of the 5th Amendment and Section 1 of the 14th Amendment to the Constitution of the United States.

These plaintiffs have suffered, are suffering, and will continue to suffer irreparable loss and damage as a result of plaintiffs, and each of them being denied the right to compensation in the use of the knowledge and skill each of the said plaintiffs acquired as demanded in Section 2 of said Chapter 290, and are now under injunctions in the District and Supreme Court of the State of Kansas, from lawfully using such knowledge and skill, unless a restraining order is issued forthwith and upon hear-

ing an interlocutory injunction issued; and upon final hearing the defendants, and each of them be permanently enjoined from the enforcement, operation or execution of the restrictions in Section 2 and all of Section 10 of said Chapter 290 of the laws of 1913, by restraining the action of the defendant Frank L. Carlson as Governor of the State of Kansas, and the defendant, Edward F. Arn, as the Attorney General of the State of Kansas, in the enforcement, operation, or execution of said statute.

WHEREFORE, THE PLAINTIFFS PRAY:

(a) That a restraining order be issued forthwith restraining the defendant, Frank L. Carlson as Governor and the defendant, Edward F. Arn as Attorney General, of the State of Kansas, from the enforcement, operation, or execution of the restrictions in Section 2, and any part of Section 10, of Chapter 290 of the Laws of 1913, as applied to these plaintiffs, and each of them, by restraining the action of said defendants in the enforcement, operation or execution of said statute.

(b) That upon hearing before a Three-Judge Court, an interlocutory injunction be granted enjoining said defendants, as State officers, in the enforcement, operation or execution of said statute as prayed for in paragraph (a).

(c) Upon final hearing on the merits of this action this Court determine that the restrictions in Section 2, and all of Section 10, Chapter 290 of the Laws of 1913, is void, as against public policy, detrimental to the public health, unreasonable exercise of the police power of the State of Kansas, discriminatory, and in violation of the 5th Amendment and Section 1 of the 14th Amendment to the Constitution of the United States.

(d) That the defendants, Frank L. Carlson as Governor of the State of Kansas, and Edward F. Arn, as Attorney General of the State of Kansas, and each of them be permanently enjoined from the enforcement, operation, or execution of the restrictions in Section 2, and any part of Section 10 of said Chapter 290 of the Laws of 1913, as applied to these plaintiffs and each of them.

For such other and further relief as the Court may deem proper, equitable, and just; and that plaintiffs recover their cost herein.

NeSMITH & IRWIN

/s/ Robt. L. NeSmith

E. H. Hatcher,

808 National Bank of Topeka Bldg.,
Topeka, Kansas.

Order

With the complaint the plaintiffs also filed a motion before the Hon. Arthur J. Mellott, District Judge, requesting a restraining order, and made application for an interlocutory injunction restraining and enjoining the defendants from enforcing the Medical Practice Act in Kansas pending the final outcome of the case. On November 1, 1947, Judge Mellott denied the injunctive relief but issued the following order:

This cause came on to be heard upon the motions of the plaintiffs in the above entitled cause for restraining order and for an interlocutory injunction against the above named defendants, on a complaint filed in the second division of this court on October 30, 1947, verified by one of the plaintiffs, viz., B. L. Gleason.

It appearing to the court that the said complaint seeks an interlocutory judgment enjoining the defendants above named, as Governor and Attorney General of the State of Kansas, "from the enforcement, operation or execution of the restriction in Section 2 and all of Section 10 of Chapter 290 of the Laws of 1913", upon the ground that the said sections are void as against public policy, detrimental to the public health, and that the restrictions therein contained constitute an unreasonable exercise of the police power of the State of Kansas, are discriminatory and in violation of the Fifth Amendment and Section 1 of the Fourteenth Amendment to the Constitution of the United States, and upon consideration of the arguments and suggestions of counsel for the plaintiffs, at an *ex parte* hearing before the court, it is now ORDERED AND ADJUDGED as follows:

1. That the undersigned, Arthur J. Mellott, Judge of the above Court, hereby calls to his assistance, to hear and determine the application for an interlocutory injunction in this cause, the Honorable Orie L. Phillips and the Honorable Alfred P. Murrah, Judges of the Circuit Court of Appeals for the Tenth Circuit;
2. That irreparable loss or damage to the complainant will probably not result if a restraining order is not granted. Therefore the motion for a restraining order is now taken under advisement by the undersigned, with leave to complainants to call the motion up for further hearing, if deemed to be necessary, at any time prior to the hearing upon and determining of the application for an interlocutory injunction by the three-judge court;
3. That hearing upon plaintiff's application for an interlocutory injunction be heard in the First Division of this Court, rather than in the Division in which it was filed, unless counsel

file formal objection with this Court to the transfer of said cause for such hearing;

4. That the defendants above named, and each of them, shall, on December 9, 1947, appear in the courtroom of this Court at Topeka, Kansas, at 10:00 o'clock A.M. and then and there show cause, if any, they or either of them have, why an interlocutory injunction should not issue as prayed for in said complaint.

One of the charges made in the complaint is that the "statute confers a special privilege upon the Allopathic Profession in Kansas." A member of the immediate family of the undersigned being a duly licensed and practicing physician and surgeon in the State of Kansas, the undersigned now certifies (Judicial Code, Section 21) that he deems himself unable to participate in the trial of this cause and, Judges Phillips and Murrah consenting thereto, now designates and requests the Honorable Walter A. Huxman, a Judge of the Circuit Court of Appeals for the Tenth Circuit duly assigned as District Judge for this District, to serve upon the three-judge Tribunal in lieu of the undersigned.

It is further ORDERED AND DIRECTED that a copy of this order be forthwith served upon the defendants by the marshal of this Court and return showing such service be made, as required in connection with services of summons and other process under Rule 4 (g) of the Rules of Civil Procedure.

Dated at Kansas City, Kansas, this 1st day of November, 1947.

(Signed) Arthur J. Mellott
District Judge

First Hearing

On December 9, 1947, a three-judge Federal Court met at Topeka. Attorneys for the plaintiffs were Robert L. NeSmith, Wichita, and E. H. Hatcher, Topeka. The defense was conducted by Edward F. Arn, Topeka, Attorney General; Blake A. Williamson, Kansas City, special assistant to the Attorney General, and Kirke W. Dale, Arkansas City, also assisting the Attorney General and representing the Kansas Medical Society under its authority to enter the case *amicus curiae*. At this hearing the plaintiffs asked for an interlocutory injunction against the enforcement of the Medical Practice Act in Kansas. This was denied. The defense asked for immediate dismissal of the case, which was also denied, and the plaintiffs were granted leave to file an amended complaint.

Amended Complaint

The original complaint was amended to include, in addition to the four osteopaths previously named, three other osteopaths, Frank E. Loose of Newton, Robert L. Wright of Wichita, and James B. Donley of Kingman, and also alleged that "this action is brought by these plaintiffs for themselves as individuals, and as individuals for the benefit of all osteopathic physicians and surgeons in the State of Kansas, constituting a class of persons having a com-

mon interest herein, but being so numerous as to make it impracticable and inconvenient to bring them before the court as plaintiffs in this suit." The osteopaths added to this amended complaint had not previously been enjoined by a Kansas court. This changed the case from an individual matter to a class suit, after which the American Osteopathic Association through its general counsel took a prominent part in the litigation.

Second Hearing

Attorneys for the defense filed an extensive brief with the court prior to the second hearing, held in Topeka on February 10, 1948. The plaintiffs contended that testimony should be introduced before the court which would, according to them, establish that surgery and drug therapy were taught and practiced as a part of osteopathy in 1913, when the Kansas law was passed. The defendants argued that such matters were within the police powers of the state for the protection of the public health and cited numerous cases to sustain their position. The defendants then moved for a judgment upon the pleadings and to dismiss the case, claiming that no substantial Federal question was involved, that the question was a problem for the legislature to determine and for six other reasons set out in the motion. This motion was denied, and the court requested the parties to present evidence for their determination along with the legal questions involved.

Third Hearing

On April 19, 1948, the trial began at Topeka. Eight or ten witnesses were presented on each side of the case during the hearing, which lasted four and one-half days. Osteopaths from many parts of the United States testified on behalf of the plaintiffs. For the defense witnesses were doctors of medicine who, prior to their medical education, had been osteopaths. During this period several attorneys from the American Osteopathic Association assisted the plaintiffs, and the American Medical Association sent its legal counsel and the director of its Council on Legal Medicine to advise with attorneys for the defense. Upon the conclusion of the testimony both sides prepared briefs and findings of fact and conclusions of law, which were submitted to the court.

Decision

On November 16, 1948, the court issued a preliminary statement entitled "Findings of Fact and Conclusions of Law," which is quoted below in its entirety:

By this class action, the plaintiffs, all osteopathic physicians, seek to temporarily and permanently enjoin as unconstitutional the laws of Kansas regulating the practice of osteopathy in that State. Because temporary injunctive relief is sought, a three-judge court was convened pursuant to Section 266 of the Judicial Code, Title 28 U. S. C. A., Section 380, now 28 U.S.C., Section 2281.

Section 2, Ch. 290, Laws of 1913 (65-1201, General Statutes Kansas 1935), prescribes the educational qualifications prerequisite to examination for certificate to practice osteopathy in Kansas. It provides that the Board of Osteopathic Examination and Registration (created by 74 G.S. 1201), shall subject all qualified applicants to a practical examination in the subjects of anatomy, physiology, physiological chemistry and toxicology, pathology, diag-

nosis, hygiene, obstetrics and gynecology, surgery, principles and practice of osteopathy, and such other subjects as the Board may require. If such examinations are satisfactorily passed, the Board shall issue to the applicant a certificate to practice osteopathy in the State of Kansas as taught and practiced in the legally incorporated colleges of good repute.

As construed and interpreted by authoritative and controlling Kansas decisions, the applicable statutes confine the practice of osteopathy primarily to manipulative therapy, and forbids an osteopathic physician to use or administer medicinal therapeutics or operative surgery with instruments in the practice of his profession. *State v. Gleason*, 79 P. 2d 911; *State v. Moore*, 117 P. 2d 598. In other words, the osteopathic profession is classified and regulated as a drugless and knifeless healing art or science.

As thus construed and applied, the plaintiffs say that they are required to study and become proficient in the use of drugs and surgery, while being denied the privilege of using either in the practice of their profession; that such restriction upon the right to pursue their profession is arbitrary, unreasonable, and a denial of due process of law. It is said that the requirements for a license to practice osteopathy are substantially the same or similar as those for a regular license to practice medicine, and to thus restrict one profession and not the other, amounts to a deprivation of the equal protection of the laws, and tends to foster an unlawful monopoly.

FINDINGS OF FACT

I

Prior and since the enactment of the Osteopathic Practice Act of 1913, the science of osteopathy has been and is now based upon the concept that the curative powers for bodily disease, infirmity or disability, are within the body itself, and if the structural integrity of the body is maintained, the natural cures will combat the disability; that the art and science of osteopathy lies in detecting and correcting structural derangement in the body by manipulative therapy. Osteopathy recognizes the use of surgery to a limited degree as a complement to osteopathy, but confines it to cases where the tissues are so badly diseased or degenerated or destroyed that regeneration by manual manipulation is not indicated.

The science of medicine, as taught in the "regular" schools of medicine prior and since 1913, is based upon the use of all known and available healing and curative agencies, and a licensee to practice medicine and surgery in Kansas is not limited in his choice or remedies.

II

The course of study prescribed by the recognized

schools of osteopathy in 1913 included study and training in the use of drugs as a palliative agency and as antidotes for poisons and as anesthetics. The fundamentals of surgery were taught and many of the graduates of these schools have and are now performing operative surgery and administering drugs as practicing osteopaths in states where such practices are not prohibited.

The prescribed courses of study taught in 1913 in the respective schools of osteopathy and medicine were substantially the same, except materia medica and pharmacology were not taught in schools of osteopathy. The pedagogy differed only in emphasis, intensity and degree. The two professions have a common objective, that is the restoration of health, yet there was a basic difference in the scientific approach of each.

III

For the purpose of regulation, the State of Kansas has recognized and classified the practice of medicine and surgery as a separate and distinct branch of the healing art, and has prescribed the training and qualifications for a license to practice such profession. It has created a board of medical examiners, with power to regulate the practice in accordance with the prescribed standards. See G.L. 65-1001. It has recognized and classified osteopathy as a separate and distinct branch of the healing art, and prescribed the standards thereof. It has created a separate board, with power to regulate the practice of that profession. It has recognized and classified chiropractic as another branch of the healing art and prescribed the standards of that profession, with a separate regulatory board to conduct examinations and issue the authorized licenses. G.L. 65-1301. Thus the Legislature has recognized and classified the practice of medicine and surgery as one separate and distinct branch of the healing art, the practice of osteopathy another, and chiropractic still another. The requisite qualifications for a license to practice the respective professions in the State of Kansas are appropriate to each, and are attainable by reasonable study or application. All persons desiring to administer drugs or perform surgery with instruments in the practice of the healing art may secure a license to do so by complying with requirements of state law.

IV

Section 74-1001, Kansas Statutes, 1913, empowers a medical board to formulate rules to govern its procedure. In *Jones v. Board of Medical Examination*, 208 Pac. 639, the Supreme Court held that this statutory provision gave authority for the Board to make rules and regulations increasing the statutory qualifications. Pursuant to this, the Board has, among other rules, required that an applicant for

examination before the Medical Board must be a graduate of a reputable medical school. A reputable medical school is defined as being one approved by the American Medical Association, the Board, however, reserving the right to add to or take from the accredited list of the American Medical Association by a majority vote of the members of the Board.

CONCLUSIONS OF LAW

I

This suit arises under the Constitution of the United States, and involves in excess of \$3,000.00. This court therefore has jurisdiction of the subject matter and of the parties.

II

It is peculiarly within the province of the State of Kansas to classify and regulate the right to pursue a calling or profession having to do with the public health. The nature of the classification and the requisite qualifications for license to pursue a profession within such classification must largely depend upon the judgment of the State. The only limitation imposed upon the exercise of that power by the due process and equal protection clauses of the Constitution of the United States is that the classification shall not be arbitrary; shall bear some reasonable relationship to the legislative object, and shall not be discriminatory in its application and effect within the prescribed classification. If the required qualifications to pursue a calling or profession are obtainable by reasonable study and application, they are not arbitrary or unreasonable. *Dent v. West Virginia*, 129 U. S. 114; *Williams v. State of Arkansas*, 217 U. S. 79; *Watson v. State of Maryland*, 218 U. S. 173; *Polhemus v. American Medical Assn.* 145 F. 2d 357; *Laughney v. Maybury*, 259 P. 17; *Parker v. State*, 64 NE 862; *Davis v. Beeler*, 207 SW 2d 343. Given a valid basis for classification, there can be no discrimination between different classifications. *Missouri, Kansas & Texas Ry. Co. v. May*, 194 U. S. 267; *Watson v. State of Maryland*, *supra*.

III

The fundamental difference in the scientific approach of the osteopathic and medical profession furnishes a valid basis for the classification made out by the challenged statute. *Missouri, Kansas & Texas Ry. Co. v. May*, *Supra*; *Watson v. State of Maryland*, *supra*.

IV

The classification, and the regulation based thereon, are not arbitrary or unreasonable; that the restrictions imposed upon each classification do not operate to deprive the osteopathic profession of due

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1. Mountain, G. E.: Bronchial Asthma, J. Iowa M. Soc. 35:324 (Aug.) 1915.

process or equal protection of the laws. The injunctive relief sought is therefore denied.

/s/ Orie L. Phillips
U. S. Circuit Judge
/s/ Walter A. Huxman
U. S. Circuit Judge
/s/ Alfred P. Murrah
U. S. Circuit Judge

Judgment and Decree

On the same date the following order of dismissal of plaintiffs' case was filed and entered:

BE IT REMEMBERED That this cause came regularly on for hearing on the 19th day of April, 1948, the plaintiffs appearing in person and by counsel Robert NeSmith, E. H. Hatcher, Milton McKay and Nelson Grills; the State of Kansas by Attorney General Edward F. Arn and Blake Williamson; the State Medical Association by Kirke Dale and Donald Hickman. Testimony was taken and argument was had and the case was finally submitted on argument and brief of counsel.

AND NOW on this 16th day of November, 1948, upon consideration of the evidence and upon the Findings of Fact and Conclusions of Law,

IT IS ORDERED AND DECREED that the prayer of the plaintiffs for injunctive relief be and the same is hereby denied, and the action is dismissed at the cost of the plaintiffs.

/s/ Orie L. Phillips
U. S. Circuit Judge
/s/ Walter A. Huxman
U. S. Circuit Judge
/s/ Alfred P. Murrah
U. S. Circuit Judge

Opinions

On December 9, 1948, two of the three judges issued final legal opinions substantiating the findings of fact and conclusions of law previously rendered. The findings of fact, conclusions of law, order of dismissal and legal opinions of the court comprise the judgment of the court in favor of the defendants and against the plaintiffs.

Copies of the two opinions are set forth in full herein:

Opinion by Huxman, Circuit Judge:

I desire to set out the grounds on which I concur in the judgment of the court.

This is an action under Section 266 of the Judicial Code (28 U. S. C. A. 380), now 28 U. S. C. 2281, to enjoin defendants, the Governor and Attorney General of the State of Kansas, from the enforcement of the restrictions contained in Sections 65-1201 and 65-1005, Kansas Statutes, 1935, in so far as they apply to plaintiffs. Plaintiffs are licensed osteopaths under the laws of Kansas and bring this action for themselves and in behalf of all osteopathic physicians in Kansas. It is their claim that the above sec-

tions of the Kansas Statutes, as interpreted by the Kansas Supreme Court, are void and in violation of Section 1 of the 14th Amendment to the Constitution of the United States for the reason that plaintiffs are prohibited from using drugs and operative surgery in their practice of osteopathy notwithstanding that they are required to study and qualify themselves in the use of drugs and the practice of surgery. This, they claim, deprives them of liberty and property without due process of law.

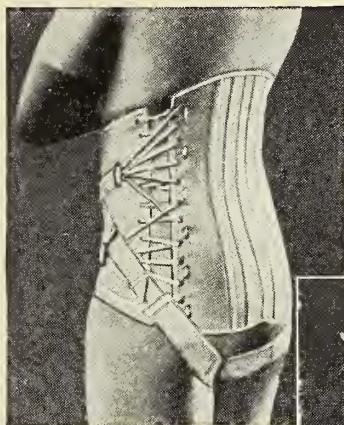
While it is not directly so stated in the Kansas Statutes, the Kansas Supreme Court has declared on several occasions and interpreted the applicable statutes to mean that persons licensed to practice medicine and surgery may use drugs and operative surgery, while those licensed to practice osteopathy are prohibited from practicing medicine and surgery. Under this construction, certain of the plaintiffs have been enjoined by the Kansas Court from the use of drugs and operative surgery. Plaintiffs, both by evidence and argument, point to their education qualifications, to the standards of osteopathic colleges generally, the training received by osteopaths in comparison to that of doctors of medicine and surgery and the scope of the examination given osteopaths by the State Osteopathic Board. Generally plaintiffs assert that they study the use of drugs and the performance of surgery in their schools to the same extent that medical students do in medical schools and that upon graduation they are qualified in these branches of the healing art to the same extent as are graduates from medical schools. They, therefore, contend that the restrictions placed upon them by the Kansas Statutes and decisions of its courts are unreasonable, arbitrary, detrimental to the public health, an unreasonable exercise of the police power, discriminatory, and in violation of Section 1 of the 14th Amendment.

In our Findings, we have found that as of 1913, the course of study in osteopathic schools did not include a study of materia medica and pharmacology, but that in other respects the course of study in osteopathic schools with regard to the use of drugs and performance of surgery was substantially the same as that in medical schools, the pedagogy differing only in emphasis, intensity and degree.

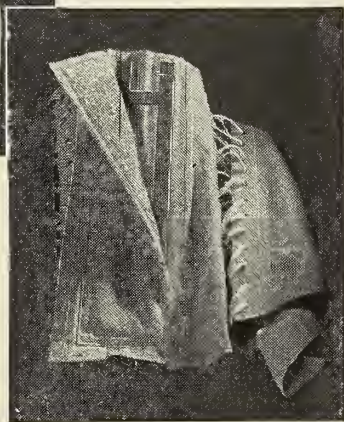
As I view the problem, the decision does not turn upon whether the use of drugs and surgery was a part of the original osteopathic concept or was subsequently engrafted upon it, in order to make osteopathy a complete unit of the healing art. Nor does the decision turn upon whether the training in the use of drugs and surgery as taught in reputable osteopathic schools is or is not the equivalent of that taught in accredited medical schools. For the purpose of this opinion, I will, therefore, assume that

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*Hugh T. Jones, M.D.

Low Back Pain from the Orthopedic Standpoint

California Medicine

Vol. 68, February, 1948

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the use of drugs and surgery was a part of the original osteopathic concept and that reputable osteopathic schools teach surgery and the use of drugs to the same extent that these subjects are taught in accredited medical schools.

The power of this court to strike down legislation by a state regulating the practice of the healing art, is a narrow one. It is well settled that the police power of the state extends to the regulation of certain trades and callings, particularly those which closely concern the public health.¹ Practitioners of the healing art are properly subject to police regulations, the details of which are primarily with the legislature and are not to be interfered with by federal courts so long as fundamental, constitutional rights are not violated.² Equal protection of the laws does not preclude states from resorting to classification for various purposes of legislation.³ The legislature has the power to classify, and narrow distinctions will justify classification in legislation if they are reasonably related to the objects of legislation.⁴

In pursuance of this power, Kansas has seen fit to differentiate between the treatment of human ills through the use of drugs and surgery and the treatment of such ills by means of manipulative therapy. In regulating the practice of the two branches of the healing art, different educational requirements are made for each. The examinations given to applicants of each class are distinguishable under the pertinent statutes designed to insure qualified, licensed practitioners in each of the two fields. The statute regulating the examination of medical doctors, Section 65-1001, Kansas Statutes, 1947 Supplement, provides in part, as follows:

"All persons intending to practice medicine or surgery after the passage of this act... shall apply to said board (Board of Medical Registration and Examination) at any regular meeting, or at any other time or place as may be designated by the board for a license. Application shall be made in writing and shall be accompanied by the fee hereinafter specified, together with the age and residence of the applicant, proof that he is of good moral character and satisfactory evidence that he has devoted not less than four periods of not less than six months each to the study of medicine and surgery. All such applicants, except as hereinafter provided, shall submit to an examination of a character to test their qualifications as practitioners of medicine or surgery, and which shall embrace all those topics and subjects

a knowledge of which is generally required by reputable medical colleges of the United States for the degree of doctor of medicine..."

These are the only statutory educational requirements for the practice of medicine and surgery. However, pursuant to Section 74-1001, Kansas Statutes, 1935, which provides that the Medical Board shall formulate rules to govern its procedure, the Kansas Court in *Jones v. Board of Medical Examination*, 111 Kan. 813, 208 Pac. 639, held that this provision gave authority for the board to make rules and regulations increasing the statutory qualifications. The present rule of the Board is as follows:

"GENERAL QUALIFICATIONS. The applicant must meet the following requirements: 1. A citizen of the United States. 2. Possessed of good moral character, willing to abide by the principles of medical ethics adopted by the American Medical Association. 3. Possessed of the minimum preliminary educational qualifications following: (a) A graduate of a four-year high school course. (b) All graduates subsequent to 1914 must have had at least two years attendance in a college of liberal arts. (c) A graduate of a reputable medical school. Reputable medical college shall be any medical college in the United States classed as an approved medical school by the American Medical Association. This board, however, reserves the right to add to or take from the accredited list of American Medical Association by a majority vote of the members of this board."

The statute regulating the practice of the osteopathic physician⁵ provides in part as follows:

"Any person not now a registered osteopathic physician of this state, before engaging in the practice of osteopathy in this state shall make application to the board of osteopathic examination and registration, on a form prescribed by the board, for a certificate to practice osteopathy, giving first his name and age, which shall not be less than twenty-one years, and residence; second, the name of the school or college of osteopathy from which he graduated, which shall have been in good repute as such, at the time of the issuing of his diploma, as determined by the board; third, the date of his diploma, evidence that such diploma was granted on personal attendance and completion of the course of study of not less than four terms of five months each, and such other information as the board may require, and sufficient evidence that the applicant is of good moral character. Such application shall be accom-

¹ *Watson v. Maryland*, 218 U.S. 173.

² *Polhemus v. A.M.A.*, 10 Cir., 145 F. 2d 357.

³ *Welch Co. v. N.H.*, 306 U.S. 79.

⁴ *N. Y. Rapid Transit Corp. v. City of New York*, 303 U.S. 573.

⁵ Section 65-1201,

Section 65-1202, Kansas Statutes, 1935.



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panied by a fee of twenty-five dollars. No holder of a diploma issued after June, 1907, shall be admitted to an examination, nor shall a certificate to practice osteopathy be otherwise granted by said board, to any such applicant unless said applicant shall have a diploma of graduation from high school, academy, state normal school, college or university, a certificate of examination for admission to the freshman class of a reputable literary or scientific college, approved by aforesaid board, as a preliminary education before taking up the study of osteopathy, and shall have graduated, after personal attendance, from an osteopathic school or college of good repute wherein the course of study shall consist of at least three years of nine months each, in three separate years, and after June 1, 1915, said applicant shall have a diploma of graduation from a high school, academy, state normal school, college or university, a certificate of examination for admission to the freshman class of a reputable literary or scientific college, approved by the aforesaid board, before taking up the study of osteopathy, and shall have graduated, after personal attendance from an osteopathic school or college of good repute wherein the course of study shall consist of at least four years of eight months each in each separate year ... The board shall subject all applicants to a practical examination, as to their qualifications for the practice of osteopathy, in writing, in the subjects of anatomy, physiology, physiological chemistry and toxicology, pathology, diagnosis, hygiene, obstetrics and gynecology, surgery, principles and practice of osteopathy, and such other subjects as the board may require. This may be supplemented by other practical examinations such as the board may by rule determine. If such examination is passed in a manner satisfactory to the board, then the board shall issue to said applicant a certificate granting him the right to practice osteopathy in the state of Kansas, as taught and practiced in the legally incorporated colleges of osteopathy of good repute..."

Section 65-1202, G.S. Kansas, 1935, states:

"Osteopathic school or college of good repute; defined. The words, 'osteopathic school or college of good repute,' wherever used in this act, shall be deemed and taken to include only such schools or colleges of osteopathy as are legally incorporated, and which prescribe a course of study covering the time provided for under the provisions of this act, and which shall instruct in all the branches of study in which examinations are required for license under the provisions of this act, and shall require the personal attendance of the student throughout the course, and the re-

quirements of which shall be in no particular less than those prescribed by the American Osteopathic Association..."

It is clear from the Kansas Statutes that Kansas recognizes the practice of medicine and surgery as a branch of the healing art, separate and apart from that of osteopathy.⁶ Two separate and distinct sets of regulations have been set up to control what Kansas considers to be two distinguishable branches of the healing art. Kansas has seen fit to set up one board to examine those who would practice surgery and the use of drugs and a separate board to examine those who would practice cure of disease by manipulation or osteopathic practices. It has set up the qualifications which applicants must meet who would take the examination before the medical board for the right to practice surgery and medicine, and the qualifications of applicants who would take the examination before the Osteopathic Board for the right to practice osteopathy. No one would seriously contend that it is arbitrary or unreasonable to compel one who seeks the right to perform surgery or administer drugs and medicines to be a graduate of an approved school or that he take the examination before a board composed of members qualified specially in such subjects, and that would be so even if plaintiffs are correct in their contention that the use of surgery and the administration of drugs always has been a part of the osteopathic concept.

In order then for plaintiffs to make a case entitling them to relief under the 14th Amendment, it is necessary for them to show that the osteopathic colleges from which they are graduates meet all the educational qualifications of the Kansas Statutes and of the rules adopted by the medical board, for those who would practice surgery and the use of drugs and medicine, that they are approved schools or that approval has been arbitrarily and unreasonably denied and that they have been denied the right to take the examination before the medical board. It is not contended that plaintiffs have met this burden nor is this the theory upon which they bring their case, but these elements are present and inherent in considering whether they have been denied the due process guaranteed by the 14th Amendment.

As pointed out, plaintiffs pitch their entire case on the proposition that surgery and the use of drugs have always been a part of the osteopathic concept and that graduating from osteopathic colleges, maintaining comparable courses of study with medical schools and passing the osteopathic board of examination is sufficient to entitle one to the practice of medicine and surgery. With this we cannot agree.

⁶ State v. Gleason, 79 Pac. 2d 911;
State v. Moore, 117 Pac. 2d 598.

The Importance of Protein Adequacy In Diabetes Mellitus

It appears in the light of recent experience that the daily protein requirement of the diabetic has been underestimated and calls for an upward revision.

The success obtained in diabetic retinopathy from the use of high protein diets emphasizes the deleterious possibilities of hypoalbuminemia in this metabolic disease.

In view of the excellent results observed from a high protein intake, in many forms of hepatic disease, a dietary rich in protein is suggested as a therapeutic measure in the management of liver enlargement, one of the frequent complications of diabetes.¹ Since impaired liver function reduces the efficacy of insulin, prevention of liver enlargement by a liberal allowance of protein in the daily diet of the diabetic appears an important factor in the control of this disease. With an estimated 2,000,000 diabetics in the United States² every benefit achieved in this field makes itself felt on a truly large scale.

Meat is an outstanding source of protein in the dietary of the patient with diabetes mellitus for these reasons: It is notably rich in protein, from 17 to 20 per cent of its uncooked, and from 25 to 30 per cent of its cooked weight. The protein of meat, regardless of cut or kind, whether fresh, cured, or canned, is biologically complete. All meat is of excellent digestibility—from 96 to 98 per cent. Furthermore, meat ranks with the best sources of B vitamins, potassium and phosphorus, all of which are essential factors in the metabolism of carbohydrate.

¹Nutrition in Diabetes, Nutrition Rev. 6:257 (Sept.) 1948.

²Diabetes and Arteriosclerosis in Youth, Editorial, J.A.M.A. 135:1074 (Dec. 20) 1947.

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It is still necessary that such schools be approved as provided by law and the appropriate regulations, and that graduates therefrom take the examination before the medical board. Of course, if approval were arbitrarily denied to a qualified osteopathic school and if its graduates were arbitrarily denied the right to take the examination before the medical board, a different question might arise, but such is not the case here. Statutory regulations requiring all applicants for the right to practice surgery and the administration of drugs and medicine to be graduates of approved schools and to take an examination before a medical board composed of members qualified in such subjects are not unreasonable or arbitrary and therefore do not contravene any rights provided by the 14th Amendment.

I am authorized by the Court to say that we do not pass on the question whether it is lawful for graduates from qualified osteopathic schools in Kansas to practice incidental surgery such as severing the umbilical cord or repairing lacerations by the use of surgery in obstetrical cases.

OPINION BY PHILLIPS, Chief Judge:

I desire to supplement what Judge Huxman has said, in order to more fully and more accurately reflect my views with respect to the issues presented.

In my opinion, the evidence clearly established these facts:

At the time of the adoption of Ch. 290, Laws of Kansas, 1913, Sections 65-1201—65-1206, G.S. Kan. 1935, and for at least a substantial number of years thereafter, osteopathy as taught and practiced in the legally incorporated colleges of osteopathy of good repute was a system of therapeutics based on the theory that diseases are due chiefly to structural derangement in the body; the practice of the science of osteopathy consisted in the detection of structural derangement and the restoration of structural integrity solely by manual manipulation, thus providing a healthy nerve and blood supply to the part involved and thereby allowing it to combat or cure the diseased condition; and the theory of osteopathy embraced the concepts that "Every living organism has within it the power to manufacture and prepare all chemicals, materials and forces needed to build and repair itself," and that "No material other than food and water taken in satisfaction of the demands of appetite... can be introduced from the outside without detriment," and "when every part" of the body "is adjusted and in perfect harmony" health will be maintained.¹

Osteopathy wholly repudiates drug therapy and sanctions the use of drugs only as anesthetics, external antiseptics, antidotes for poison, and possibly as a palliative for pain.

Dictionaries and judicial decisions uniformly define osteopathy as a system of treating diseases of the human body by manual manipulation without the use of drugs or surgery.²

It is provided by a number of statutes and generally held by the courts that license to practice osteopathy does not give the holder the right to prescribe or administer drugs or perform surgery with instruments.³ A person licensed to practice medicine and surgery in Kansas may not practice osteopathy without meeting the requirements for a license to practice osteopathy and obtaining such license.⁴

Osteopathy recognizes that surgery should be employed, when necessary, not as a part of the practice of osteopathy, but as a complement thereto. In the catalog of the American School of Osteopathy for 1918-1919, p. 50, the following statement appears: "Osteopathy is the physical or manual manipulation of the body structures, without instruments,... while surgery in a somewhat different way... handles the body structures physically and manually with instruments." Substantially the same statement is found in the catalogs of that school for the years 1913-1914, 1914-1915, and 1915-1916.

In the catalog of that school for 1918-1919, pp. 50, 52, it is stated that osteopathy has prevented many thousands of useless surgical operations; that osteopathy adjusts structures so that a healthy nerve and blood supply to the part involved allows it to combat or cure the diseased condition; but when in a limited number of cases, where, through trauma or other causes, the tissues have been so destroyed, diseased, or degenerated that restoration of a healthy nerve and blood supply cannot be accomplished through manual manipulation, that then resort should be had to surgery. It gives as examples, lacerations in childbirth, certain types of congenital deformities, and certain kinds of tumors. It states that "Surgery repairs cuts, removes tissues so badly diseased or degenerated that regeneration is impossible, and... complements the other part (osteopathy) of rational therapeutics." It plainly states that surgery is not a part of, but a complement to, osteopathy. Substantially the same statements are found in the earlier catalogs referred to above.

² State v. Baker 229 N.C. 73, 48 S.E. 2d 61, 65, and cases there cited;
Burke v. Kansas State Osteopathic Ass'n, 10 Cir., 111 F. 2d 250, 252, 253.

³ 41 Am. Jur., Sec. 26, p. 156;
Note, 86 A.L.R. 626.

⁴ State v. Hopkins, _____ Mont. _____, 166 P. 304, 306, 307;
State v. Wood, _____ Mont. _____, 165 P. 592, 594.

¹ Twenty-First Annual Catalog, American School of Osteopathy, 1913-1914, pp. 10, 11.

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The above catalogs state, in substance, that the practice of osteopathy and major surgery should not be combined; that the school undertakes to prepare its students to do minor surgery only, to diagnose cases where major surgery should be resorted to, and to give after treatment in major surgery cases.

Such catalogs further state, in substance, that while the teaching of surgery has been broadened to meet the demands of patients, osteopathy would never countenance the use of drug therapy, except for the limited purposes stated above.

The catalogs of the Des Moines Still College of Osteopathy for 1917-1918, 1916-1917, and 1914-1915, in describing the course in surgery, plainly state that it does not undertake to prepare its students to do major surgery, but only to do minor surgery, and recognizes surgery as an adjunct to, and not a part of, osteopathy.

That such was the theory and the practice of osteopathy as taught in the incorporated colleges of osteopathy of good repute in the year 1913 and years prior and subsequent thereto was also proven by the testimony of persons who were students in such colleges in the year 1913 and years prior and subsequent thereto.

Thus, it will be seen that in the year 1913, there were fundamental differences in the osteopathic theory of therapeutics and the practice of osteopathy and the theory of therapeutics of medicine and surgery and the practice thereof.

It is established that the Equal Protection Clause of the Fourteenth Amendment permits classification for the purposes of legislation and the power to classify is of wide range and flexibility. However, the classification must be reasonable, not arbitrary, and must rest upon some ground of difference having a fair and substantial relation to the object of the legislation so that all persons similarly circumstanced will be treated alike.⁵

It seems clear to me that the fundamental differences adverted to above fully justified the state in placing the practice of osteopathy in one classification and the practice of medicine and surgery in another classification, in establishing different educational requirements and providing different examination tests for osteopaths, and in restricting osteopaths to the practice of osteopathy, in order to preserve the public health and welfare.

It may be, that the curricula of the schools of osteopathy have either been broadened or varied since 1913 so as to teach a limited use of drug

therapy and so as to better prepare their students for the doing of surgery as a complement to the practice of osteopathy. But, in 1913 the osteopathic colleges did not teach drug therapy and did not adequately prepare their students to practice major surgery and recognized surgery not as a part of, but as a mere complement to, osteopathy. That being true, Kansas was justified in restricting the licensed osteopath to the practice of osteopathy and in prohibiting him from prescribing or administering drugs and, subject to the qualifications stated in the last paragraph of Judge Huxman's opinion, from doing surgery with instruments, since such restriction and prohibitions had a real and substantial relation to the object sought, the preservation of the public health and welfare. Moreover, by employing the phrase "osteopathy...as taught and practiced in the legally incorporated colleges of osteopathy of good repute," the legislature of Kansas did not set the signification of osteopathy at large so as to permit the osteopathic colleges to give it any meaning they should choose. Osteopathy was a system of treating diseases of the human body without drugs or surgery and the legislature merely authorized the colleges to determine, select, and teach the most desirable methods of doing what is comprehended within the term osteopathy. Colleges could not change the laws of Kansas or widen the scope of the osteopath's certificate so as to permit him to practice other systems of healing by the simple expedient of varying their curricula.⁶

Counsel for plaintiffs urge, however, that in 1913 the legally incorporated and reputable schools of osteopathy taught surgery and that, in order to obtain a license to practice osteopathy in Kansas, it was necessary for the applicant to graduate from one of such schools and pass an examination in the subjects enumerated in the statute or required by the osteopathic board, including the subject of surgery. In my opinion, such a requirement is not unreasonable. The osteopathic colleges recognized that in a limited number of cases where tissues had become so badly diseased, degenerated, or destroyed, that regeneration was not possible through manipulative treatment, surgery should be resorted to as a complement to osteopathy, and they undertook to train their students so they would be able to diagnose and advise major surgery, where resort thereto was necessary as a complement to osteopathy. If that fact, recognized by the osteopathic colleges, is true, the necessity of the osteopath having sufficient surgical training to enable him to diagnose and de-

⁵Colgate v. Harvey, 296 U.S. 404, 422, 423.

⁶State v. Baker, 229 N.C. 73, 48 S.E. 2d 61, 65;
State v. Wagner, — Neb. —, 297 N.W. 906, 910, 911;
Georgia Ass'n of O. Physicians and Surgeons v. Allen, D.C. Ga.,
31 F. Supp. 206, 213;
State v. Bonham, — Wash. —, 161 P. 377, 381.

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termine cases where surgery should be resorted to as a necessary complement to osteopathy and advise surgery in such cases is obvious. Therefore, it was not unreasonable in 1913 to require applicants for a license to practice osteopathy to graduate from such schools and to pass an examination in the subject of surgery. As stated by the court in *Georgia Ass'n of O. Physicians and Surgeons v. Allen, D.C. Ga., 31 F. Supp. 206, 213*, "His knowledge must be broader than his practice; he must know what he practices, but he may not practice all he knows."

If an osteopath in Kansas desires to engage in the practice of medicine and surgery, he must meet the requirements laid down for a license so to do. These requirements are attainable by reasonable study and application, are appropriate to the end sought to be attained, and are neither unreasonable nor arbitrary.⁷

If the osteopathic colleges desire to broaden or vary their curricula so as to train their students not only to practice osteopathy, but also medicine and

surgery, in Kansas, then with respect to the latter they must meet the requirements to constitute them approved medical schools. I repeat, they cannot broaden the license to practice osteopathy in Kansas by the simple expedient of varying or expanding their curricula.

With the wisdom or expediency of the statutory requirements here involved, we are not concerned. Our sole function is to determine whether they deny the equal protection of the laws in violation of the Fourteenth Amendment. It is my conclusion that the statute, as construed by the Supreme Court of Kansas, is valid.

Deleted from this report has been material such as the briefs, the transcript of the testimony and the findings of fact, all of which are on file in the Executive Office of the Kansas Medical Society. Recorded in this issue of the Journal for the benefit of members of the Kansas Medical Society are all of the official pleadings and judgment pertaining to this action. As stated in the beginning, it is probable that the case will be carried to the Supreme Court of the United States. Copies of the motion for new trial and motion to set aside findings of fact and conclusions of law have not been included as they are before the court and have not been acted upon. Later reports will follow in order.

⁷ *Dent v. West Virginia*, 129 U.S. 114;
State v. Hopkins, Mont., 166 P. 304, 307;
People v. Witt 315 Ill. 282, 146 N.E. 178, 37 A.L.R. 672.

American Legion Opposes Socialized Medicine

A resolution opposing socialized medicine was enacted at the 30th annual convention of the American Legion, meeting in Miami, Florida, late in October. It was sponsored by the Department of Illinois and was recommended for passage by the Committee on Rehabilitation. The text of the resolution follows:

WHEREAS, The American Legion has consistently opposed all efforts to socialize medicine in the United States as evidenced by the resolution adopted in 1945 and reiterated in 1946, and

WHEREAS, there is still persistent and constant effort being made to enact socialized medicine legislation for the alleged benefit of all the people of the United States, and

WHEREAS, compulsory health insurance would result in a general loss of our high standards of health care which now exist and would deprive us of a large measure of our personal liberty and would also increase the burden of bureaucracy, and

WHEREAS, Government control of medical care would add an enormous tax burden to the American people, including hundreds of thousands of our disabled veterans of both wars, and widows and orphans of our deceased veterans, and

WHEREAS, The American Legion takes pride in

our program of improving the standard of medical care within the Veterans Administration and other contract institutions, which has now done much to elevate the standard of care in all hospitals, and

WHEREAS, it is still our conviction that any compulsory health insurance plan—political medicine—destroys the essential personal relationship between patient and the doctor of his choice and increases Government supervision and control of our private lives and is in full substance and effect—the planned economy of a collectivist nature—and,

WHEREAS, the Communists have proclaimed "socialized medicine is the keystone to the arch of the socialistic state," and

WHEREAS, any plan of compulsory health insurance would have the tendency to lower the standard of medical care that is now guaranteed our veterans and would also deprive the citizen of the right to select the quality of medical care that he can afford, and this, we believe, is contrary to the fundamental rights of the individual,

NOW THEREFORE BE IT RESOLVED by The American Legion in Convention assembled in Miami, Florida, this 18th, 19th, 20th and 21st of October, 1948, that we are still unalterably opposed to all efforts and movements to enforce socialized medicine upon the American people.

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BERTRAND I. KREHBIEL, M.D., Pediatrician, Topeka.
JOHN LICHTY, M.D., Professor of Pediatrics, University of Colorado School of Medicine.
EDWARD M. MARTIN, M.D., Division of Maternal and Child Health, Kansas State Board of Health, Topeka.

University of Kansas Faculty:

GEORGE V. HERRMAN, M.D., Assistant Professor Pediatrics.
HERBERT C. MILLER, M.D., Professor of Pediatrics.
MERVIN J. RUMOLD, M.D., Associate in Surgery.
CLARK W. SEELY, M.D., Instructor in Pediatrics.
RICHARD L. SUTTON, JR., M.D., Associate Professor of Dermatology.
GALEN M. TICE, M.D., Professor of Radiology.
HERBERT A. WENNER, M.D., Assistant Professor of Pediatrics.
SLOAN J. WILSON, M.D., Assistant Professor of Medicine.

SUBJECTS TO BE DISCUSSED

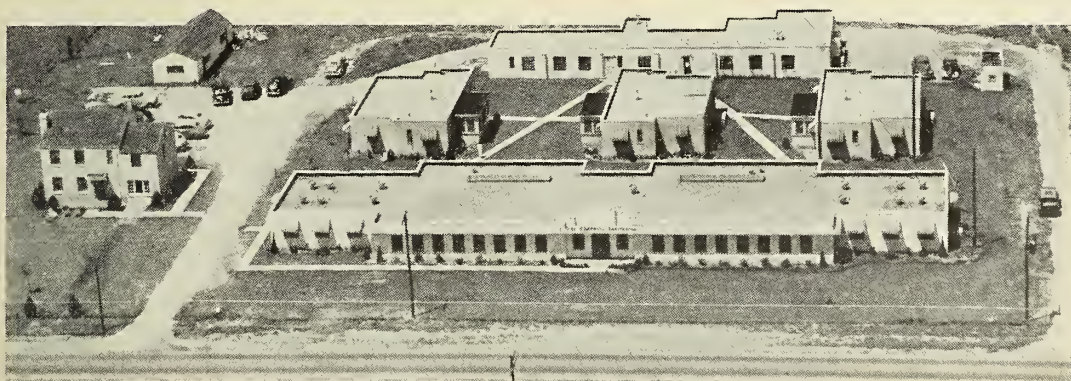
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COUNTY SOCIETIES

The Shawnee County Medical Society met December 6 at the Jayhawk Hotel, Topeka, at which time members of the Auxiliary were guests. The following officers were named to serve in 1949: president, Dr. Leo A. Smith; president-elect, Dr. Lucius E. Eckles; vice president, Dr. Don C. Wakeman; secretary, Dr. Dwight Lawson; treasurer, Dr. G. F. Helwig.

* * *

Officers of the Cherokee County Society were elected at a meeting held in Galena late in November: president, Dr. C. C. Fuller, Columbus; vice president, Dr. F. E. Deal, Weir; secretary-treasurer, Dr. Donald Bux, Columbus.

* * *

Dr. I. Joseph Waxse, Oswego, was named president of the Labette County Society at a meeting held at Parsons November 28. Other officers named are: vice president, Dr. Evert C. Beatty; secretary-treasurer, Dr. M. Leon Bauman.

* * *

The Rice County Medical Society met at the Lyons hospital December 1. Dr. J. B. Jarrott, Hutchinson, presented a paper on "Fractures Above the Elbow."

* * *

The election of officers for the Atchison County Society was held December 8 at the Atchison hospital. Dr. Spencer Fast was named president for the coming year, Dr. E. T. Wulff, vice president, and Dr. F. I. Stuart, delegate to the state society meetings.

* * *

Members of the Sumner County Medical Society and Auxiliary held a joint dinner meeting at Harry's Cafe, Wellington, December 16.

* * *

Dr. Orville S. Walters was elected president of the McPherson County Society at a meeting held at the McPherson hospital December 8. Dr. Weir Pierson was named vice president, Dr. Robert Sohlberg, Jr., secretary, and Dr. A. M. Lohrentz, treasurer.

* * *

The monthly meeting of the Sedgwick County Society was held December 7 at the Broadview Hotel, Wichita. Dr. William Valk of the University of Kansas Medical Center discussed "The Renogram," and Dr. Franklin D. Murphy, dean of the medical school, outlined the rural health program proposed by the university.

* * *

The Wilson County Society met at the Kelley

Hotel, Neodesha, December 8 and elected the following officers: Dr. E. C. Duncan, Fredonia, president; Dr. A. Mary Hayden, Fredonia, vice president; Dr. Charles Stevenson, Neodesha, secretary. Dr. Duncan had served the society as secretary for the past 40 years.

* * *

A combined meeting of the Mitchell County Society and the staff of the Beloit Community Hospital was held December 7 at the Porter Hotel, Beloit. Dr. O. W. Davidson, Kansas City, spoke on "Urological Errors."

* * *

The following officers of the Wyandotte County Society were elected at a meeting held in Kansas City December 21: Dr. William H. Algie, president; Dr. Maurice J. Ryan, vice president; Dr. Ward W. Summerville, secretary; Dr. J. W. Manley, treasurer; Dr. P. E. Hiebert, censor; Dr. L. B. Gloyne, Dr. John S. Betz, Dr. Paul Lorhan and Dr. E. R. Mills, delegates to the state society. Dr. W. F. Roth, Jr., director of the psychiatric receiving ward at the University of Kansas Medical Center, outlined a four-point program that could be carried out to improve the treatment of the mentally ill in Kansas.

* * *

Physicians of the Pittsburg vicinity, southwestern Missouri and northeastern Oklahoma were guests of Dr. C. Herbert Smith and members of the Smith Clinic staff, Pittsburg, at a dinner meeting held at the Hotel Stilwell December 12. Those present were physicians cooperating in the monthly cancer clinic at Pittsburg. Dr. Stewart Gillmor, specialist in rheumatic diseases in Kansas City, and Dr. E. H. Skinner, radiologist in Kansas City, were guest speakers.

* * *

The Montgomery County Society entertained members of the Auxiliary at a dinner meeting at the Hotel Dale, Coffeyville, November 17. Dr. A. E. Martin showed sound and motion pictures on physiotherapy subjects for the scientific program. Officers for 1949 were elected as follows: president, Dr. P. M. Clark, Independence; vice president, Dr. W. R. Beine, Coffeyville; secretary, Dr. E. H. Beahm, Independence; treasurer, Dr. G. C. Bates, Independence; board of censors, Dr. J. G. Hughbanks, Independence.

* * *

A meeting of the Pratt County Society was held at the Park Hills Country Club, Pratt, December 14. The following officers were elected: president, Dr. C. V. Black; secretary-treasurer, Dr. F. A. Thorpe; delegate, Dr. Athol Cochran; alternate, Dr. J. R. Campbell; censors, Dr. Cochran, Dr. Campbell and Dr. E. M. Ireland.

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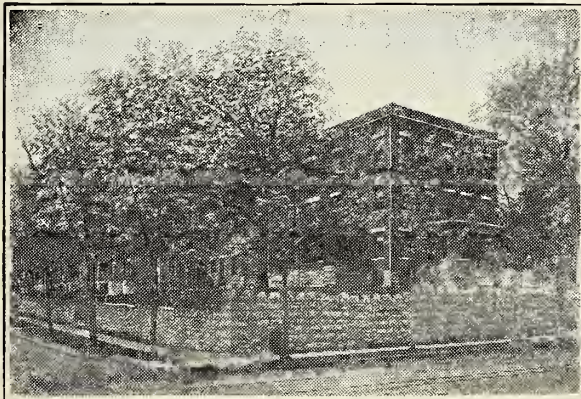
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The quarterly meeting of the Central Kansas Medical Society was held at the city hall at Russell, December 16, with members of the Auxiliary as guests at a dinner that evening. During the afternoon there was a round table discussion of duodenal ulcer with the following physicians taking part: Dr. Thomas J. Rankin, chief of medicine at the Wichita VA Hospital; Dr. Philip Cooper, chief of surgery at the Wichita VA Hospital; Dr. James B. Fisher, Wichita.

* * *

New officers of the Reno County Society for 1949 are: Dr. J. N. Blank, Hutchinson, president; Dr. Sam Jones, Hutchinson, vice president; Dr. L. F. Glaser, Hutchinson, secretary.

* * *

A meeting of the Cowley County Society was held December 16 at Arkansas City. Dr. F. H. Chard, Wichita, presented a paper on common skin diseases.

* * *

Members of the Barton County Society, meeting December 21, elected the following officers: president, Dr. David T. Loy; vice president, Dr. Corbin Robison; secretary-treasurer, Dr. Robert C. Polson; delegate, Dr. L. R. McGill; censors, Dr. R. J. Leiker and Dr. R. J. Wheeler.

* * *

Dr. Wayne C. Bartlett, Wichita, was guest speaker at the meeting of the Butler County Society held December 13 at El Dorado. His topic was "Regional Ileitis."

ACTIVITIES OF MEMBERS

Dr. William P. Callahan, Wichita, will address a four-state meeting of the International College of Surgeons at Miami, Florida, during a meeting on January 20 and 21. He will take part in a scientific session.

* * *

Dr. Noble E. Melencamp, Dodge City, has been nominated to receive the title, "Southwest Kansas Leader of the Year," in a contest sponsored by the Hutchinson News-Herald.

* * *

Dr. LaVerne B. Spake, Kansas City, addressed the Kansas City Kiwanis Club at a meeting held December 16. His subject was, "The Deaf Child, Cause and Treatment."

* * *

Dr. H. O. Marsh, Wichita, has enrolled for post-graduate work in orthopedics at Tulane University, New Orleans. He will return to his practice next June.

Dr. Charles Joss, Topeka, recently passed examinations given by the American Board of Surgery.

* * *

Dr. James G. Conley, Pittsburg, received the local Eagles lodge civic award for community service at a ceremony held November 28.

* * *

Dr. F. M. Coffman, Ford, was honored by the community at a party on December 2, the occasion of his 71st birthday. A program was presented by some of the more than 1,500 persons at whose birth he had assisted, and a tribute was also given by the Ford County Medical Society.

DEATH NOTICES

FRANKLIN JEROME WALKER, M.D.

Dr. Frank J. Walker, 74, Wichita physician who retired in 1938, died at his home December 1. He was graduated from the Kansas Medical College, Topeka, in 1902, and began practice in Wichita, leaving there only during World War I when he served in the Army medical corps in France.

* * *

EMERY GOLDEN COYLE, M.D.

Dr. E. G. Coyle, 59, who had practiced in Coffeyville for 36 years, died at a Kansas City hospital December 11. He received his medical degree from St. Louis University School of Medicine in 1911 and began practice in Coffeyville immediately afterward. During recent years his son, Dr. John F. Coyle, has been associated with him in practice. He was an active member of the Montgomery County Medical Society.

* * *

WAYNE BERNARD GRANGER, M.D.

Dr. Wayne B. Granger, 56, an active member of the Lyon County Medical Society, died December 26 as the result of injuries received when he was struck by an automobile. During his years of practice in Emporia, he specialized in eye, ear, nose and throat work. He was a diplomate of the American Board of Ophthalmology and of the American Board of Otolaryngology and was a fellow of the American College of Surgeons and of the American Academy of Ophthalmology and Otolaryngology. He received his medical education at the University of Illinois College of Medicine, graduating in 1919.



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Surgical Anatomy and Clinical Surgery, Two Weeks, Starting February 21, March 21.

Surgery of Colon and Rectum, One Week, Starting March 7, April 11.

Surgical Pathology Every Two Weeks.

GYNECOLOGY—Intensive Course, Two Weeks, Starting February 21, March 21.

Vaginal Approach to Pelvic Surgery, One Week, Starting February 14.

OBSTETRICS—Intensive Course, Two Weeks, Starting March 7.

MEDICINE—Intensive Course, Two Weeks, Starting April 4.

Personal Course in Gastroscopy, Two Weeks, Starting March 7.

PEDIATRICS—Intensive Course, Four Weeks, Starting April 4.

DERMATOLOGY—Formal Course, Two Weeks, Starting April 18.

Clinical Course Every Two Weeks.

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Clinical course starting the third Monday of every month.

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ABSTRACTS FROM CURRENT LITERATURE

Pediatric Endocrinology

Recent Progress in Pediatric Endocrinology. By Edgar Gordon. Meeting of Acad. Ped., Milwaukee, Wis., June 1948.

Obesity should be treated by adequate diet reduction. Thyroid should not be given on the basis of B.M.R. findings, but on the finding of clinical and laboratory evidence of hypothyroidism. This should include a retarded developmental record, slow dentition, dry skin, coarse hair, mental retardation, retardation of bone age, blood cholesterol 275 to 300 mg per cent. The author states, "There is no endocrine obesity."

There is an alarming increase of diabetes mellitus. Even in well controlled cases there is serious vascular damage evident even at the end of five years. Therefore some method of diabetic prophylaxis is most important, particularly in children with diabetic background. The first finding of active diabetes means the case has been coming down for at least one year. The author believes these children should have frequent urine examination for sugar and if ever found the blood sugar should be taken and the patient kept on a starvation diet until the blood sugar remains normal. During any illness these children should be protected with insulin until recovered. He believes thus lessening the load on the Isles of Langerhan may possibly prevent development of potential diabetes.—D.R.D.

* * *

Reflex Anuria

Reflex Anuria, Its Treatment by Procaine Sympathetic Block. By John M. McGowan. *Am. Jnl. Surg.*, 76:2, 205-210, Aug. 1948.

The authors cite a case of complete anuria relieved by paravertebral block of the sympathetic innerva-

tion of the kidneys. Bilateral injections are made at the levels of T-11 and 12 and L-1 and 2. Technic is described and the rationale discussed.

The authors believe that reflex anuria due to a spasm of the arterioles of the glomeruli may occur with renal trauma or organic renal disease. They feel that blocking the sympathetic innervation should be tried in most cases of anuria because of the extremely grave implications of the condition and because relief may be provided by the relatively simple technic of the paravertebral block.—T.P.B.

* * *

The "Silent" Gallstone

The "Silent" Gallstone. By James H. Saint, *Am. Jnl. Surg.*, 76:2, 121-123, Aug. 1948.

The author emphasizes that asymptomatic gallstones are a potential source of obstruction and/or inflammation leading to cholecystitis, hydrops, and empyema, pancreatitis, and common duct obstruction, as well as cholangitis and hepatitis. He particularly emphasizes that in nearly every case of cancer of the gallbladder stones are present and that the threat of malignancy alone is sufficient indication for surgery in all cases of calculus where the patient's condition warrants.—T.P.B.

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THE JOURNAL of the KANSAS MEDICAL SOCIETY

Owned and Published by The Kansas Medical Society

Volume L

FEBRUARY, 1949

Number 2

Sliding Hernia *

R. K. Gilchrist, M.D.

Chicago, Illinois

Herniotomy is considered to be one of the "easy" major operations. The resident surgeon is often allowed to do his first independent surgery for this condition. The general practitioner is apt to operate on several hernias a year. Like most other standard operations, this one may have its pitfalls. The likelihood of encountering a sliding hernia is such a pitfall. The true condition is often not recognized until the surgeon has either entered the bladder, opened the bowel or severed the blood supply to the cecum or sigmoid colon.

Sliding hernia occurs in one to three per cent of all hernias (Bevan¹ and C. William²). Albert J. Walter³, *Annals of Surgery* 57 pp 86, 1913, defined a sliding hernia thus: "Extrascular or sliding hernia is one in which some portion of the wall is formed by a viscus which in its normal function is only in part covered by peritoneum. It is thus seen that this viscus in the inguinal or femoral region may be either bladder, cecum and ascending colon or ileum, or descending colon and sigmoid." It is seldom seen in women. The left side is more often the offender. Sliding hernia may be congenital, but the most common age is in the 40 to 60 group.

A sliding hernia should be considered when the hernia is large and when reduction is difficult and painful. The neck of the sac is apt to be wide. A truss is often hard to fit and is apt to cause pain. If the bladder is the offending organ, urinary symptoms are common. If the hernia is irreducible, there may be constipation and bouts of partial obstruction with bowel cramps. Gas can sometimes be identified in the bowel which makes up the sac. A barium enema may show the colon in the sac and in such cases the surgeon is forewarned.

When the cecum or sigmoid colon is the offending organ, the bowel is apt to make up the lateral wall of the sac. The free peritoneal sac will usually be found in the medial superior part of the sac. In

rare cases the entire hernia is made up of bowel, no free peritoneum being present.

When the bladder is responsible the free peritoneal sac is apt to be on the lateral side. Sliding hernia of the bladder usually occurs in direct hernias. There is a distinct yellow color to the prevesical fat which helps warn the operator of danger. Sometimes the thick wall of the bladder can be palpated.

The sliding hernia may be enlarged by a drag from dependent structures such as a loop of ileum and the appendix pulling downward on the cecum. Pressure from within the abdomen, of course, is the most common means of enlarging a hernia. The most common causes of increased intraabdominal pressure are a chronic cough due to bronchitis, bronchiectasis, chronic nasopharyngitis, etc.; constipation where the patient strains at stool, thus increasing the intraabdominal pressure, prostatic obstruction with incomplete bladder emptying or there may be atony of the bladder where the bladder will hold 600 cc to 900 cc of urine before there is any feeling of fullness. Such patients strain forcefully to empty the bladder. Excess fat is a factor as it stretches the tissues and also increases the intraabdominal pressure.

Before discussing the various procedures available to cope with this situation, it seems worthwhile to review the operative steps which will make it possible to rapidly and safely identify the type of inguinal hernia present. We usually make an incision from just below the pubic tubercle to a point one or two inches above and lateral to the internal ring, paralleling the course of the inguinal canal. When the fascia of the external oblique muscle is reached, it is freed of fat until the external inguinal ring can be identified and the fascia is then split parallel to its fibres so as to divide the external ring at its midpoint. Then the upper flap of the external oblique fascia is freed from the underlying tissues by blunt dissection for one or one and one-half

*Presented at the 89th annual session, Kansas Medical Society, Wichita, Kansas, May 10-13, 1948.

inches. The lower flap is then freed from the cord and adventitious tissue until the shelving edge of Poupart's ligament is seen from its medial border to well beyond the internal ring. A finger is then passed behind the cord from the lateral side starting where Poupart's ligament is attached to bone keeping the finger against the ligament and bone, and the cord is lifted from its bed where it passes out of the external ring. This simple maneuver allows one to lift the cord out of the inguinal canal and this makes possible the rapid identification of the type of hernia present. A direct hernia will come through Hasselbach's triangle and when the cord is lifted, as just described, the bulge of a direct hernia can be seen in the floor of the canal; it will have nothing to do with the cord except as it may encroach on it from behind. An indirect hernia is congenital in origin. The sac follows the testicle in its descent and therefore, the sac will be within the cremasteric fascia. Of course, the indirect hernia sac will not intrude itself between the inferior epigastric vessels and the spermatic vessels and vas deferens. Instead, it will be found lying just under the cremasteric muscle and fascia in the anterior part of the cord as the cord enters the canal. Therefore, if the cremasteric muscle is divided lengthwise over its most anterior part, a short distance below the internal ring, the indirect sac should be visualized without too much searching.

Most direct inguinal hernia sacs are not long and narrow, but tend to be made up of a bulge. If there is a sliding hernia present, the bladder will be responsible and it will be present in the medial part of the defect. It is usually not necessary to open the sac of a direct hernia unless it is very long and then if it is to be opened, the peritoneum should be opened near the lateral edge of the sac in order to avoid the bladder if it is present. In most cases a series of purse string sutures either of 0 chromic catgut or of light weight silk can be used to invaginate the sac as described by Bevan¹. Each purse string will turn in a part of the sac. It will tend to make a plug of scar tissue which will prevent further herniation. The transversalis fascia may be closed over this and some type of repair done, such as a Bassini operation may be used to complete the repair, or the McVay type of repair may be done, suturing the upper edge of the transversalis fascia to Cooper's ligament. The point I wish to make is that it is seldom necessary to open the sac of a direct hernia and if the sac is not opened, and the purse string repair is used, the bladder injury need not be considered.

In the indirect inguinal hernia, the surgeon may first suspect trouble when he is unable to identify the sac and he finds that he is attempting to free a

loop of bowel from small vessels which are present. This is the time to stop and make certain that the blood supply to the bowel is not divided. If in doubt, it is better to enter the abdominal cavity through another incision before doing serious damage to the blood supply of the colon. However, if the sac and bowel can be dissected free, they are freed and then the sac is opened through the anterior part of the sac. If the sliding part of the hernia is small, the bowel can be returned to the abdominal cavity, as suggested by Zimmerman⁴, and a purse string suture is placed about the neck of the sac, placing the suture high on the anterior surface and near the bowel on the posterior surface of the sac. When this purse string is closed, the bowel is turned upward and the sac is closed. The sac and bowel are then dissected well up into the inguinal ring, and then reduced into the abdominal cavity. The large internal ring is then closed by suture of the transversalis fascia about the cord.

If the sliding hernia has a large segment of bowel making up the wall of the sac, the sac peritoneum is split parallel to the edges of the peritoneal reflection of the bowel so that there is a free border of peritoneum wide enough to sew together over the intraperitoneal part of the bowel. This serves to make a new mesentery. The bowel and sac should be freed well down within the abdominal cavity, so that the bowel is freed from the lateral wall of the abdomen. This will allow the bowel to lie free in the abdomen and it will change the entire pull of the colon. The neck of the sac is then closed, high, with a purse string suture and repair is carried out as usual. The replaced piece of cecum or sigmoid will be dependent and will pull toward the pelvis rather than pushing into the area of the hernia.

As soon as the diagnosis of a sliding hernia is made, Dr. Carrington Williams has advocated the opening of the peritoneum through a separate muscle splitting incision one inch lateral through the skin and fascia of the external oblique. This allows a free entry into the peritoneal cavity. The bowel can then be reduced from above after the colon and sac are dissected from the cord. The repair is then done through the upper incision. The excess peritoneum is cut away, the mesocolon is closed by suture and the bowel is restored to the peritoneal cavity. The suture line in the new mesocolon extends into the second incision. The transversalis fascia is closed snugly about the internal ring. This procedure is easy and offers a great safety factor in handling the bowel.

The McVey procedure is well worth remembering in these hernias. Cooper's ligament can be identified by blunt dissection after the transversalis fascia has been split in the axis of its fibres. The upper flap of transversalis fascia is then sutured to Cooper's

ligament. This procedure seems to be more correct anatomically whereas suture of the transversalis fascia to Poupart's ligament is more apt to tear out.

If the bladder is opened, the defect may be closed with two or three layers of interrupted silk. A urethral retention catheter should be kept in place for five to seven days after such an accident.

CONCLUSION

Sliding hernias are not rare. Unrecognized they can be the cause of serious surgical errors. The direct sliding hernia can usually be repaired without opening the sac, the McVey type of repair added

to the purse string invagination giving good results.

Indirect sliding hernias are often unsuspected. If the anatomical relationship cannot be identified easily, the abdomen should be opened through the muscle splitting incision as described or through paramedian incision. The avascular area of the peritoneal reflection can then be split and the true condition recognized and repaired with safety.

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90TH ANNUAL SESSION KANSAS MEDICAL SOCIETY

MAY 9-12, 1949

TOPEKA, KANSAS

Monday, May 9—Golf and skeet tournament, beginning at 10:00 a.m.

Monday, May 9—Annual golf and skeet banquet.

Tuesday, May 10—First general scientific sessions and first E.E.N.T. scientific sessions, Municipal Auditorium.

Tuesday, May 10—University of Kansas alumni banquet.

Wednesday, May 11—General and E.E.N.T. scientific sessions.

Wednesday, May 11—Annual banquet, Topeka High School Cafeteria.

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Comminuted Colles Fractures

C. K. Wier, M.D.

Wichita, Kansas

Fracture of the distal end of the radius is one of the most frequent bone injuries which the physician is required to treat. A high percentage of these occur in individuals of middle age or older and present a different problem than the same injury in a young adult. In the older patient the bones are more brittle, the distal fragment is usually badly comminuted and union of the fracture is much slower, requiring a longer period of fixation before union is solid. This longer period of immobilization will in itself lead to much disability if post reduction treatment is inadequate. Nothing new or revolutionary will be presented in this discussion. We wish to re-emphasize the principles of traction and counter traction, which have been used for ages but are often forgotten in this common everyday injury.

In the normal wrist the radial styloid lies approximately one cm. distal to the ulnar styloid. Viewed later the articular surface of the radius usually inclines about 15 degrees toward the palm (Figure 1). The lower medial extremity of the

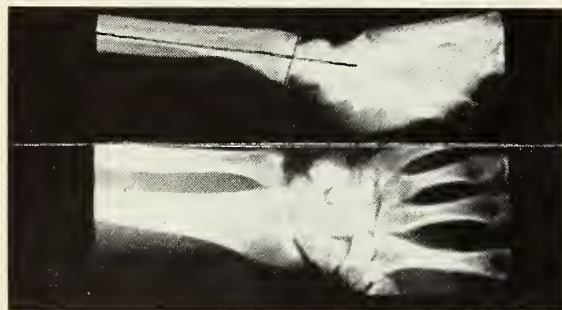


Figure 1. Top, lateral view wrist. The lower radial articular surface inclines approximately 15 degrees toward the palm. Lower, AP view wrist. The radial styloid projects one cm. beyond the lower end of ulna.

radius is concave and fits snugly against the ulna, which at that point is slightly spheroidal in shape and is the axis about which the radius moves when the hand is turned from supination to pronation (Figure 2). This lower radioulnar joint is a true joint lined by synovial membrane and covered by a capsule. It is further strengthened by the volar and dorsal carpal ligaments and the triangular articular disc which extends from the ulnar styloid to the medial edge of the radius.

In the simple Colles fracture restoration of and maintenance of this anatomical relation is not difficult. Disimpaction, correction of angulation, and immobilization for three to four weeks usually results in good function.

Diagnosis: Gross deformity of the wrist is nearly

always present and it may appear that both bones of the forearm are broken just above the wrist. History of a fall on the outstretched hand in a middle aged person suggests the diagnosis, but the final diagnosis rests on clear cut x-rays which bring out the lines of comminution in the distal fragments. Several longitudinal fracture lines may be seen ex-

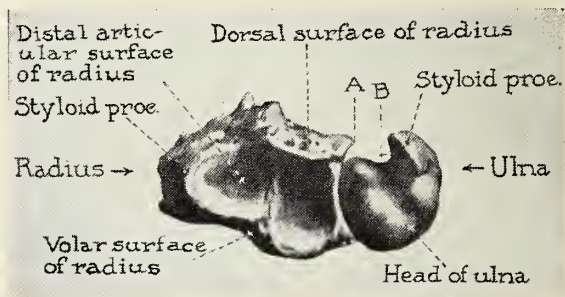


Figure 2. The articular surfaces of the left radius and ulna at the wrist. The forearm in the figure is about half way between supination and pronation. In complete supination the process A will fit into groove B. (From Magnuson *Fractures*, J. B. Lippincott Company).

tending into the articular surface of the radius, or the distal fragment may be shattered with the proximal fragment telescoped into it. Impaction is rare (Figure 3).

Treatment: Immediate reduction, under anesthesia, simplifies the procedure, and general anesthesia is preferred, although when conditions make it necessary, local anesthesia may be used. The longer one waits to reduce the fracture, the more difficult it becomes to obtain a satisfactory reduction.

Before reduction, plans are made for adequate fixation. Board splints, or ready made splints are unsuitable because they cannot be molded to the contour of the wrist, hand and forearm. Dripping wet plaster splints applied over very little padding, with the flexed elbow and lower half of the humerus incorporated in the cast have proven satisfactory.

No special equipment is necessary (Figure 4). The patient lies on an ordinary examining table. The hand is suspended above, to some overhead stationary object, such as a hook in the ceiling, the fingers being held by individual bandage loops. The elbow is padded with felt or sheet wadding and a muslin bandage with eight or ten pounds weight attached to it, is then secured to the padded area of the upper forearm. In this manner traction and counter traction are provided, and with the patient under anesthesia, the deformity quickly disappears. The operator then molds the comminuted fragments

into correct position. The radius and ulna should be pressed together while the forearm is rotated from supination to pronation, to mold the radioulna

plied, (Figure 5).

Two dripping wet plaster slabs are made, one for the dorsal and one for the volar surface of the fore-

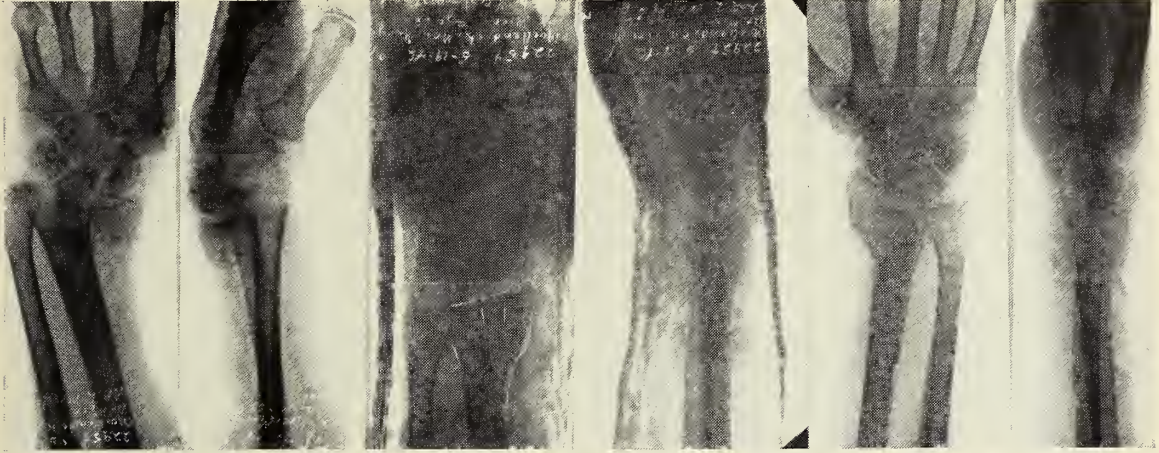


Figure 3. Comminuted Colles fracture in a patient age 56. The lower fragment is comminuted and dislocated. A. Before reduction. B. Immediately after reduction. C. After eight weeks immobilization.

joint. X-rays can be made at this point, and any necessary correction made before the plaster is ap-

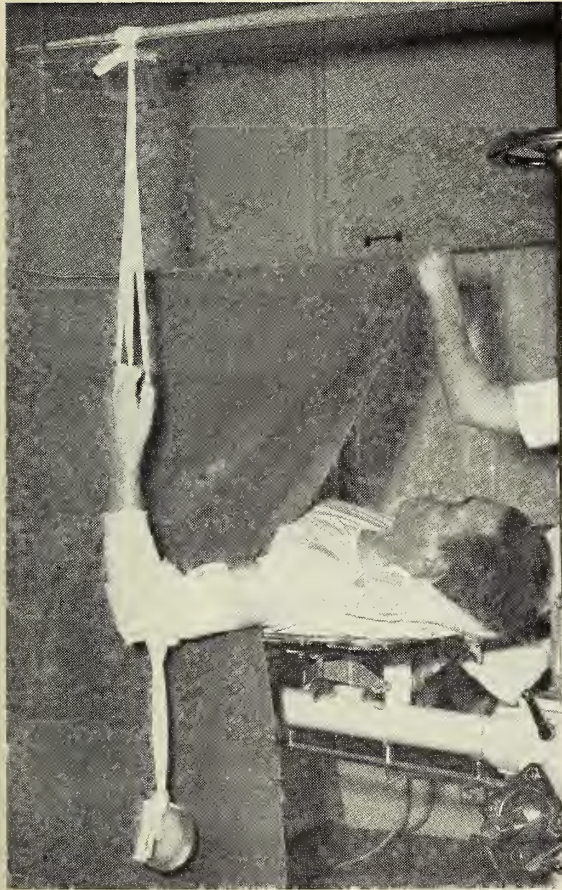


Figure 4. Reduction of the fracture. Individual three-inch bandage loops are made about the fingers and thumb, then secured to any overhead stationary object. A broader bandage is then secured to the elbow and a ten-pound weight attached to it. With the patient anesthetized the deformity will disappear with no further effort on the part of the doctor.

plied, with the one for the volar surface cut to fit the thenar area and down to the middle flexion crease of the palm. They are smoothly applied over not more than two or three layers of sheet wadding (both the plaster and sheet wadding should be trimmed so that they just cover the forearm and wrist with no overlapping). These are held in place with rolls of three-inch plaster, smoothly applied and molded to the contour of the wrist. The circular plaster is carried on up to the middle of the arm, care being taken that it is smooth and firm on the anterior surface of the arm, as this area will be subjected to some pressure after traction is released. While the plaster is drying, the operator applies



Figure 5. Palmar and dorsal views of completed cast. To maintain the normal length of the radius the hand is fixed in ulnar deviation. This actually amounts to fixed traction. Acute flexion of the wrist is of little value in this type of fracture. Black line indicates place where cast is cut to allow for any subsequent swelling and to avoid circulatory damage. Fingers and thumb are free to move through full range of motion.

pressure to the ulnar side of the wrist *with the flat palmar surface of his hand*, so as to let the plaster dry with the hand in ulnar deviation. The lower end of the ulna is a fixed point, and placing the hand in ulnar deviation helps maintain the length of the fractured radius (Figure 5).

Post reduction care starts when the plaster has hardened. The palmar side of the plaster is cut back to the middle flexion crease of the palm. The plaster is split on the ulnar side for its entire length, to allow for any subsequent swelling. The bandage loop above the elbow is cut and slipped out. The defect at this site is then covered with a few turns of plaster (Figure 5).

Following a comminuted fracture of the base of the radius, extensive hemorrhage and exudation occurs into all the adjacent structures, including the

flexor and extensor tendons, carpal joint spaces, volar and extensor ligaments, fascia and subcutaneous tissue.

This leads to extensive adhesions and a frozen, shiny, useless hand if the fingers are immobilized. A finger which is kept moving does not become stiff. Weeks of physiotherapy will not compensate for three or four weeks of immobilization of the fingers—during which time the extensor tendons and lateral ligaments of the MCP and interphalangeal joints become shortened and contracted, making flexion of the fingers impossible. This can be prevented if the patient is allowed to be his own physiotherapist and urged to move his fingers and thumb through their normal range many times daily. The patient should be seen frequently during the first two weeks so that the doctor may be sure the



Figure 6. Malunited Colles fracture. Radial shortening and radial joint surface inclined toward dorsum. C and D after Campbell procedure, correcting radial shortening and angulation. E and F are x-rays six years later. Roentgenologist's report: "No bone or joint abnormality."

active motion of the fingers is being carried out. Light work is encouraged. The shoulder should be moved through a complete range of motion several times daily to prevent an adhesive capsulitis and fixation of the shoulder in adduction. It does happen in the older group.

At the end of about two weeks when the swelling has subsided, the cast is removed and a new one applied over stockinette. No other padding is applied except a small piece of felt, which is placed over the prominence of the lower end of the ulna. The elbow is not included. After this no sling is used for the forearm and the patient is advised to forget the fracture, and continue using the fingers and thumb freely. At the end of another four weeks the cast is again removed and the state of union checked by x-ray. If union is still not solid, immobilization is continued until it is.

Usually six to eight weeks are required for the firm union of this type of fracture. At no time during this period is the splint removed for passive motion of the wrist or other procedures such as massage and diathermy, as such measures will result in angulation and loss of length of the radius. There are some cases in which it will be impossible to maintain the full length of the radius, but every effort expended toward that end will be well worth while.

Old malunited fractures usually respond well to operative correction. The procedures usually used are the Willis Campbell and the Jackson Barrow. They are similar in that an osteotomy is done through the old fracture site. In the Campbell method a wedge shaped bone graft is taken from the lower end of the ulna of the affected wrist and placed in the osteotomy gap. In the Barrow procedure the wedge shaped bone graft of proper size is taken from the iliac crest and similarly placed. Both these methods restore the length of the radius and correct the angulation. Ghormley, Thornton, and Durham have described similar procedures.

Summary

Comminuted Colles fracture is the most frequent bony injury occurring in the middle aged patient. Traction and counter traction are of great help in obtaining a satisfactory reduction. Correctly applied plaster casts and careful post-reduction supervision by the physician will yield satisfactory results.

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90th ANNUAL SESSION KANSAS MEDICAL SOCIETY

May 9-12, 1949 — Topeka, Kansas

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Lymphocytic Choriomeningitis—Detection of Virus in Body Fluids of a Patient*

H. A. Wenner, M.D., M. M. Swan, M.D., and I. Heilbrunn, M.S.**

Kansas City, Kansas

Soon after the virus of lymphocytic choriomeningitis (LCM) was detected¹ it was realized that this agent was causally related to some of the serous meningitides occurring in man^{2, 3, 4}. Further study⁵ has made clear the fact that among human beings infection with LCM virus prevails more often than is appreciated, since infection with this virus is not always associated with symptoms referable to the central nervous system (CNS).

Wooley, *et.al.*⁵ found neutralizing antibodies for LCM virus in about 12 per cent of the adult population in the United States. During the last 15 years various clinical forms of infection with LCM virus have been recognized. These clinical forms include (a) meningitis, (b) encephalomyelitis, and (c) abortive types of illness. Unrecognized infection with this virus occurs fairly commonly.

It is the purpose of this report to direct attention to lymphocytic choriomeningitis virus as one cause of meningoencephalitis in man. The report describes the clinical course of illness and the detection of LCM virus in the blood and spinal fluid of a patient sick with meningoencephalitis.

Clinical History

E. C., male, *aet.* 25 years, was admitted to the student hospital, Kansas State College, Manhattan, Kansas, on January 7, 1948. He complained of fatigue, headache, and that his nose was "stuffed up." During the next seven days he had sore throat, pain in the right chest during deep inspiration, increasingly severe headache, generalized tenderness of the abdomen, backache, and progressive somnolence. He had fever which reached 103° to 104° F. daily. Daily blood counts showed a leukopenia: the count ranged from 2,900 to 5,200 WBC/mm.³

On January 14, 1948, he was admitted to the Winter Veterans Administration Hospital, Topeka, Kansas. He was lethargic; when aroused, he responded coherently. He complained bitterly of back and abdominal pain, stiffness of the neck, and weakness of the legs. There was marked photophobia. He vomited frequently.

Physical Examination. T: 103° F.; P: 75; B.P.: 100/70. The patient was a well-developed and well-

nourished white male. He appeared acutely ill. No effort was made to speak. When questioned directly, answers were intelligently given. There was a mild diffuse erythema present on the face and chest. The neck was stiff. An occasional discrete, soft, moderately enlarged lymph node was felt in the anterior cervical region. The nose and throat were moderately reddened. Heart and lungs revealed no abnormal findings. The spleen was palpable.

Neurological Examination (Dr. R. E. Sutherland). *Cranial nerves:* these were intact, except that the left pupil showed "almost no change either to accommodation or to light directly or consensually." *Motor status:* the motor power was good. Muscle tone was bilaterally equal and slightly diminished. There was no atrophy or fibrillation. Flexing the neck was quite painful beyond about 30 degrees. *Reflexes:* the deep reflexes were present. The knee jerk was slightly increased on the left. Babinski's sign was positive on the left. The right lower abdominal reflex was sluggishly present; the left lower abdominal reflex was absent.

Course. The patient continued to have fever until January 28. Vomiting was a prominent symptom for the first three or four days.

On January 23 the scrotum was red and swollen. *The left epididymus was swollen (3X) and tender.** There was marked improvement during the ensuing seven days. Acute catarrhal otitis media developed on February 10. Otherwise convalescence was somewhat prolonged, and was characterized by a continuous low-grade headache. On the 43rd hospital day the patient had recovered to an extent that he was able to return to his college work.

Laboratory Data

Urine: No abnormal findings (eight examinations).

Blood	RBC (millions)	Hgb. (Grams)	WBC	Neut.	Lymph.	Mono.	Eos.	Baso.
1/14/48	5.2	..	5,400	49	47	4	..	..
1/16/48	5.1	15.3	4,300	46	46	5	2	1
1/28/48	4.6	14	13,800	64	33	2	1	..
2/12/48	4.8	14	10,400	67	28	3	2	..

Blood Chemistry

N.P.N.	Total				Blood Sugar
Mg. %	Protein %	Alb. %	Glob. %	A/G	Mg. %
36.6	5.3	4.0	1.3	3.1	103

*Aided by a grant-in-aid from the United States Public Health Service.

**From the Hixon Memorial Laboratory, University of Kansas School of Medicine, Kansas City, Kansas, and the Veterans' Administration Hospital, Topeka, Kansas.

*Epididymitis and orchitis are complications of mumps; in a survey of the literature, epididymitis was not found heretofore as a complication of lymphocytic choriomeningitis. No direct evidence is available to delineate the specific or non-specific cause of the epididymitis. A rise in antibodies to mumps virus during convalescence was not apparent (serum inhibition of hemagglutinins.)

Cerebrospinal Fluid

	WBC	Neut.	Mono.	RBC	Total Protein Mg. %	Sugar Mg. %	Cultures*
1/14/48	306	...	100%	...	160	82	..
1/23/48	1150	8%	87	144	233	50	..
2/ 2/48	105	6%	94	1809	145	52	..

Whole blood and cerebrospinal fluid (in frozen state) was mailed to the Virus Laboratory on January 14, 1948. A virus able to cause encephalitis in mice was detected in the blood and spinal fluid obtained from this patient.

Isolation of Virus From Body Fluids

Spinal Fluid: the spinal fluid was inoculated into the brain of six Swiss mice, two guinea pigs (also into the peritoneal cavity), and a rabbit.

Mice: inoculum = 0.03 cc. 1C.† Five mice sickened on the sixth day. One had convulsive seizures. Three of the sick mice were sacrificed and their CNS emulsion passed to healthy mice. Of the remaining three mice, one died and was discarded; tissues from another were taken for histological study; finally, one mouse survived (21 days).

Guinea Pigs: inoculum = 1.0 cc. IP† and 0.1 cc. IC. GP 1-33; fever (106° F) and sick on the eighth day. The animal was sacrificed. GP 1-34; fever (106° F) and sick seventh to ninth day. Sacrificed on the ninth day. CNS emulsions from each of these pigs caused encephalitis in mice.

Rabbits: inoculum = 0.25 cc. IC. R 2-61; found dead on third day. CNS emulsion from this rabbit produced signs of encephalitis in mice.

Blood: heparin was added to the blood at collection. Whole blood was inoculated into the brains of six Swiss mice, two guinea pigs (intraperitoneal inoculation was done also), and a rabbit.

Mice: two mice died during the first day. Of four remaining mice, one sickened and convulsed on the seventh day. Three mice survived (21 days). CNS obtained from the sick mouse was passaged to healthy mice and all developed encephalitis.

Guinea Pigs: inoculum = 1.0 cc. IP; 0.1 cc. IC. GP 1-04 and 1-05; both animals died within 24 hours after inoculation.

Rabbits: inoculum = 0.25 cc. IC. The rabbit had fever of 105° F. on the second day. He survived 21 days. No further fever or signs of illness occurred.

Passage of Virus in Rodents

Mice: mice inoculated in the brain sickened within four to seven days. During this period they sat quietly in a humped position. Their fur was roughened. If stimulated they became tremulous and convulsions occurred. Death occurred between the fifth and twelfth days, unless sacrificed earlier.

*Cultures were made to detect the presence of pyogenic and tubercle bacilli.

†IP, intraperitoneal inoculation. IC, intracerebral inoculation.

At its second passage in mice the CNS of these animals was titrated for virus content. The 50 per cent endpoint was found in dilution 10^{-5.5}*

Rabbits: a rabbit inoculated in the brain died on the third day; virus was present in the CNS of this animal, but not in another that died on the fourteenth day. The virus failed to cause kerato-conjunctivitis following inoculation of a rabbit's scarified cornea.

Guinea Pigs: guinea pigs developed fever (105-106.5° F) four to five days after intracerebral or intraperitoneal inoculation of virus-containing material. The pigs were ruffled, slow in action and failed to eat. Animals were sacrificed for histology and passage material six to nine days after inoculation.

Histopathology

Mice: there was a meningo-encephalitis. The pia-arachnoid was infiltrated with mononuclear cells. The choroid plexus was edematous, and infiltrated with mononuclear and polymorphonuclear leukocytes. *Guinea Pigs:* the reaction was less intense than in mice. Scattered focal plaques of mononuclear cells were seen in the pia-arachnoid. There was patchy involvement of the choroid plexus. There was edema and infiltration of the choroid with inflammatory cells.

Serological Studies Made to Identify the Virus and to Relate It to the Patient's Illness

Neutralization Tests: two tests were made, namely, (a) to determine serologic similarity with a known strain of lymphocytic choriomeningitis virus, and (b) to detect an increase in the neutralizing antibody content in convalescent serum obtained from the patient.

Method. In the conduct of the neutralization test equal parts (0.2 cc) of serum and appropriate dilution of virus† (10⁻¹ to 10⁻⁶) were mixed together. The serum-virus mixture was then incubated at 37° C. for two hours. Following incubation the tubes were chilled in an ice bath. The inoculation of mice was made, beginning with the serum-virus mixture containing the least amount of virus. Five or six mice were inoculated with each dilution of the serum-virus mixture. The 50 per cent endpoint was calculated according to the method of Reed and Muench⁶.

*The 50 per cent endpoint is that dilution of virus (10^{-5.5} = 1:316,000) which will kill half the inoculated mice. The endpoint is calculated according to a formula of Reed and Muench⁶ and is based on cumulative mortality of animals inoculated with several dilutions of virus.

†All tests were made with material from the same pool of virus maintained at 70° C. During a six-month period there was a 10-fold drop in titer.

The neutralization index is the anti-log of the difference between control and test groups of mice.

The results of these tests appear in Table I and Table II. Neutralizing antibodies were present in low titer in serum obtained from the patient on the 12th and 23rd days of illness. The antibody titer apparently diminished on the 49th day. A high neutralizing antibody titer (2,570) was present on the 146th day.

The results of comparative titration of the patient's virus with serum containing neutralizing antibodies to a known strain of LCM virus (M strain) appear in Table II. Cotton rat and monkey immune serums neutralized not only the parent strain but the strain isolated from cerebrospinal fluid of the patient also.

were prepared as antigens⁷. Two sets of serial two-fold dilutions of inactivated serum (56° C.) were made. To one set LCM antigen was added; to the other, normal guinea pig spleen extract. The tubes were shaken and allowed to stand for ten minutes. Two exact units of complement were added and the tubes placed overnight in the refrigerator. The next morning the hemolytic system was added to the tubes. The tubes were incubated in a water bath (37° C.). The test was read ten minutes after negative controls were completely hemolysed⁸.

The dilution of serum giving at least two plus fixation of complement was considered to be the titer of the serum.

The serum obtained on the 12th day of illness was used in neutralization tests; none of it remained for

TABLE I
NEUTRALIZATION OF E. C.'S VIRUS WITH PATIENT'S (E.C.) SERUM

Serum	Days After Onset	Fate of Mice						50% End Point	Neutral- ization Index
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	10 ⁻⁵	10 ⁻⁶		
Control.....	.....	.....	.....	5/5	4/4	4/5	1/5	10 ^{-5.5}	.....
E. C.....	12	.....	.....	4/4	0/3	0/3	0/5	10 ^{-3.5}	100
E. C.....	23	.....	4/4	2/5	0/5	.....	.....	10 ^{-3.0}	316
Control.....	.....	.....	.....	4/5	4/5	3/5	0/5	10 ^{-4.8}	.....
E. C.....	49	3/3	5/5	4/5	.....	.....	.....	10 ^{-3.0}	63
Control.....	.....	.....	.....	5/5	4/5	0/5	0/5	10 ^{-4.4}	.....
E. C.....	146	0/4	0/5	0/5	0/5	.....	.....	10 ⁻¹	2570

TABLE II
NEUTRALIZATION OF E.C. VIRUS WITH LCM IMMUNE SERUM

Serum*	Virus	Fate of Mice						50% End Point	Neutral- ization Index
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	10 ⁻⁵	10 ⁻⁶		
Control	E.C.	.....	.....	5/5	4/4	4/5	1/5	10 ^{-5.5}	.....
RH 167-M	E.C.	4/4	4/4	1/5	0/5	.....	.....	10 ^{-2.4}	1260
Control	E.C.	.....	.....	4/5	4/5	3/5	0/5	10 ^{-4.8}	.....
Cotton Rat-M	E.C.	4/5	5/5	1/5	.....	.....	.....	10 ^{-2.5}	200
RH 168-M	E.C.	5/5	5/5	2/5	.....	.....	.....	10 ^{-2.8}	100
Control-M	M.	.....	.....	5/5	5/5	2/5	1/5	10 ^{-5.0}	.....
Cotton Rat-M	M.	5/5	5/5	2/5	.....	.....	.....	10 ^{-2.8}	158
RH 168	M.	5/5	4/5	1/5	.....	.....	.....	10 ^{-2.5}	316

M—known strain of LCM virus
RH—rhesus monkey
E.C.—virus isolated from patient's cerebrospinal fluid
5/5—five mice died of five inoculated intracerebrally with serum-virus mixture

Complement Fixation Tests. The ability of the patient's serum to fix complement in the presence of LCM antigen was tested also.
Method. Infected and normal guinea pig spleens

further tests. The titer of serum obtained on the 23rd day fixed complement in 1.8 dilution, whereas serum obtained on the 49th day fixed complement in a 1:4 dilution.

* Hyperimmune serum was obtained by repeated inoculation of convalescent animals with the M strain of virus¹⁵.

Summary: the detection of a virus in the CSF and blood of a patient with meningoencephalitis was identified as the virus of lymphocytic choriomeningitis. Identification was based on (1) the clinical course and pathology in rodents inoculated with virus, and (2) the presence of a serological kinship with a known strain of LCM virus. Moreover, neutralizing and complement-fixing antibodies against the patient's strain of virus were present in the patient's serum.

Discussion

The present report is made to direct attention to (a) serous meningitis in man; among them, one example is lymphocytic choriomeningitis, and (b) to bring into view some current ideas in regard to the epidemiology of this disease. An excellent and extensive paper on these subjects has been prepared by Farmer and Janeway⁹.

The Clinical Syndrome

As is true of some other diseases, the syndrome is quite variable. Many of those ill with the disease do not have frank involvement of the central nervous system. These abortive illnesses are characterized by the same symptoms that occur prodromal to the appearance of meningitis, but since CNS signs do not appear the disease seldom is thought of.

Subcutaneous inoculation of LCM virus into humans is followed by an influenza-like illness. The incubation period is one to three days; following this there appear rigors, malaise, muscular aches and pains, lumbar backache, leukopenia, and fever (101-104° F.). The fever tends to occur in two or three waves and the febrile period lasts seven to 20 days. If meningitis intervenes (it did so in about half of the human cases) it generally occurs in the second or third week of illness.

Besides the "grippal" and meningeal forms there is recognized an encephalomyelitic form in which papilledema, paralysis of extremities and hyperalgesia indicate damage to the brain and spinal cord. Convalescence is prolonged and may not be complete.

Virus can be detected in the blood during the first weeks of illness. If meningitis occurs the virus can be found in the cerebrospinal fluid. LCM virus has been detected in the mouth washings of a patient during convalescence (second and third month). Apparently the virus is not present in the oral secretions during the period of acute illness.

Specific antibodies appear in the circulating blood of patients ill with lymphocytic choriomeningitis. Neutralizing antibodies develop slowly and appear only after six or eight weeks following onset of illness. Several months may be required before they reach their highest titer. They usually persist for at

least several years after infection. Complement-fixing antibodies appear three to four weeks after onset; they may disappear in the ensuing six months, although they have been known to persist for two years.

Epidemiology

In a number of reported cases the environmental circumstances suggested that mice may have been a reservoir of virus. In 1935 Traub¹¹ detected LCM virus in the blood and urine of apparently healthy laboratory mice. The infected gravid females transmitted the virus to their offspring; these offspring may carry virus for several months. Armstrong and his associates¹⁰ as well as others⁹ trapped house mice in the houses of patients. The virus of LCM was present in excreta from some of these mice. An association of virus infection in mice with human cases of lymphocytic choriomeningitis was established.

Recently, Havens¹² reported on the occurrence of lymphocytic choriomeningitis in a patient who worked in a granary and removed mice from traps. Our patient also worked in a granary prior to onset of his illness; mice were present there. In Havens' study, LCM virus was detected in mice trapped in the granary where the patient worked; in our study this was not done. Nevertheless, the environmental circumstances suggest strongly that these individuals were infected with LCM virus of rodent origin.

In the laboratory LCM virus can be transmitted to guinea pigs by infected *Aedes aegypti* mosquitoes¹³ and by the tick *Dermacentor andersoni*. Bedbugs, blood sucking mites, monkey lice and human body lice¹⁴ can at least passively carry virus and transmit the disease from an infected animal to a healthy host.

The limited distribution of cases to households, its apparent lack of contagion, the prevalence of cases in winter and spring and the established fact that mice are reservoirs of virus in nature point strongly toward transfer of virus from mouse to man. The precise means of transmission is unknown. Direct contamination of skin with virus, the bite of infected mites and lice are possible avenues by which infection occurs. A virus similar to if not identical to LCM virus has been found in dogs.

Summary

A virus has been detected in the cerebrospinal fluid and blood of a patient ill with meningoencephalitis. The causative agent was identified as lymphocytic choriomeningitis virus. The presence in convalescence of serum antibodies for lymphocytic choriomeningitis virus indicates that the virus isolated from the body fluids of the patient was responsible for his illness.

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EXPANDED SCIENTIFIC EXHIBIT SECTION AT THE 90th ANNUAL SESSION KANSAS MEDICAL SOCIETY

MAY 9-12, 1949

TOPEKA, KANSAS

The Committee on Scientific Exhibits hopes to expand that section of the annual meeting and will welcome reservations for space from all physicians who wish to exhibit original work.

A committee composed of guest speakers will select the three outstanding exhibits, basing their decision on originality of the project and the clarity with which it is demonstrated. Awards will be announced at the annual banquet.

Exhibit space should be reserved in advance. Requests for space may be addressed to

A. A. Fink, M.D., Chairman
Committee on Scientific Exhibits
Kansas Medical Society
512 New England Building
Topeka, Kansas

"Trigger Areas" as Cause of Persistent Chest and Shoulder Pain in Myocardial Infarction or Angina Pectoris *

Heinz Richard Landmann, M.D. * *

Topeka, Kansas

Relief of the somatic component of cardiac pain by infiltration with procaine or by ethyl chloride spray has commanded attention recently through the work of Rinzier and Travell¹. This followed the earlier work of Travell, Rinzier and Herman² who, prompted by the work of Steindler and Luck³, used their technic of infiltrating with procaine "trigger areas," originally so termed by Edeiken and Wolferth⁴, in cases of pain and disability of the shoulder and arm. Their results were surprisingly good.

The following are the details of two cases of our own. They are being reported to demonstrate the importance of keeping such "trigger mechanisms" in mind lest one commits the error of confusing such chest or shoulder pain with either myocardial infarction or angina pectoris.

Case 1: E.D.K., a 62-year-old white newspaper editor, was admitted to this hospital on June 14, 1948, because of pain in the left chest, shoulder and arm following exertion. The onset occurred about three months prior to admission when he first noticed pain in his left chest after walking only a short distance. He described the pain as being severe enough to make him stop briefly, following which it would subside allowing him to resume his walking. Approximately six weeks thereafter, he noticed, in addition to his chest pain, pain in the left shoulder which at times radiated into the left arm and hand. He stated that even though the chest pain would disappear, the pain in his arm would linger. He believed the cause of the pain to be arthritis of his shoulder but became concerned about his heart when the attacks persisted following exertion.

The family history was non-contributory. He was moderate smoker and used very little alcohol. The past history included diphtheria without complications in 1919 and, in 1941, cerebral thrombosis with transient right sided paresis and speech disturbance, from which he made a complete recovery.

The patient had no cough, no nocturia, no exertional dyspnea, and no visible edema. The appetite

was good, bowel habits normal. There were no G.U. complaints.

The patient was a well nourished, well developed white male who was mentally alert. Physical examination was essentially normal with the exception of moderate sclerosis of the peripheral vessels. Fundoscopic examination revealed narrowed vessels with moderate tortuosity and A-V nicking. The heart was clinically not enlarged; the sounds were distant but clear; there were no murmurs; the rhythm was regular; the rate 72. The systolic BP was 170 mm Hg and the diastolic 90. The abdomen revealed nothing remarkable. Fluoroscopy of the chest disclosed no pathology of the heart and the great vessels. There were some mild hypertrophic changes of the anterior and posterior margins of the bodies of C-5, C-6, and C-7.

Laboratory findings: urinalysis on admission disclosed a spec. gr. 1.025; 2 plus albumen; negative sugar; microscopically negative. R.B.C. 5,590,000; Hb. 14.3 gm; W.B.C. 5,000; 62 neutro. 36 lymph. 2 eosinoph. Blood sedimentation rate (Wintrobe) was 28 mm/hr. corrected. Blood Kahn and Kolmer were negative. Repeat urinalysis on several occasions failed to disclose further albuminuria. An electrocardiogram revealed no abnormalities with the exception of a tendency to low amplitude QRS in leads I, III and AVL. However, a Master exercise tolerance test produced a slight depression of the ST segment, best seen in Leads II, V2 and V6. A diagnosis of arteriosclerotic cardiovascular disease and coronary insufficiency without myocardial infarction was made. Treatment consisting of bed rest and nitroglycerin gr. 1/250 q. two hours was instituted and patient was greatly relieved. He felt, however, that, though he rested well at night, he still experienced some pain over his left chest and arm on awakening in the mornings which would be promptly relieved by nitroglycerin. He was discharged on July 28, 1948, with the recommendation that he continue his medication.

On the evening of August 2, 1948, while at work, the patient experienced a sudden severe pain in his chest which radiated to the left shoulder and arm. It was not relieved by repeated doses of nitroglycerin. Because of the persistence of the pain he was re-admitted to the hospital early on August 3,

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* *From the Medical Service, Veterans Administration Hospital, Topeka, Kansas.

1948, with the diagnosis, by the admitting physician, of an acute coronary thrombosis. An immediate hypodermic injection of morphine gr. $\frac{1}{4}$ relieved him partially. His temperature on admission was 96.8; pulse 124; respiration 24; blood pressure 164/120 mm Hg. R.B.C. 5,130,000; Hb. 15 grams; W.B.C. 7,400; neutrophils 48; lymphocytes 41; monocytes 6; eosinophils 4; basophils 1. Blood sedimentation rate (Wintrobe) 19 mm/hr. corrected. When seen six hours later, the patient located the pain just to the left of the sternum with radiation to the left shoulder and arm. There was no change in the cardiac findings from those of the previous examination, except that the blood pressure had fallen to 115/70 and the pulse rate to 42. The electrocardiogram taken at this time showed a sinus bradycardia, the only change noticeable in lead III where the heretofore flat P and T waves had become upright. Serial electrocardiograms over the next four days showed no remarkable alterations except that lead III returned to its original pattern. BP rose to 140/80 and pulse returned to normal within 24 hours. The pain subsided within 24 hours, but the patient remained apprehensive and continued to take nitroglycerin as a preventive measure. On a detailed re-examination four distinct trigger areas were demonstrated, two in the pectoralis major muscle, one in the pectoralis minor and one in the subacromial region, all on the left side. Pressure over these points reproduced the typical pain originally complained of by the patient, i. e. pain in the chest with radiation to the shoulder, arm and hand. Each trigger area was infiltrated with five cc of $\frac{1}{4}$ per cent procaine in normal saline solution. The patient experienced immediate relief which lasted for approximately three days after which minor discomfort in the shoulder recurred in the mornings. Four days after the procaine infiltration, the patient was re-examined for trigger zones. Only the subacromial region noted above was found sensitive and this was again injected with five cc of 1 per cent procaine solution. Immediately thereafter the patient volunteered the statement that all pain had disappeared. The patient has remained symptom free and has discontinued his nitroglycerin.

Case 2: F.D.G., a 45-year-old white male, had his first admission to this hospital on February 27, 1946. In 1942, he had one admission to another hospital for "heart disease" and was given nitroglycerin upon his discharge. The details of this hospitalization were not obtainable. Following this, he had no difficulties until about two weeks prior to his admission here, when he complained of short periods of pain about the heart following emotional strain or physical exertion. The pain was located over the precordium and radiated to the right arm, neck and back. Following a coughing spell Feb-

ruary 27, 1946, the pain was more severe and persisted, necessitating hospitalization. Family history was essentially non-contributory. The past history was not remarkable. He was a moderate smoker and drinker of alcoholic beverages.

Physical examination revealed a well developed, well nourished, tall white male. On admission the temperature was 98; pulse 60; respiration 18. PMI was silent, the heart clinically not enlarged, the sounds of good quality, clear, without murmurs; the rhythm was regular; there was no friction rub. The remainder of the physical examination was not remarkable except for some moderately sclerotic peripheral vessels.

Laboratory findings: Blood Kahn and Kolmer negative. R.B.C. 5,070,000; Hb. 15 gm; W.B.C. 13,200; neutrophils 89; lymphocytes 11. Blood sedimentation rate (Wintrobe) 40 mm/hr. corrected. Serial electrocardiograms showed evolutionary changes of a posterior wall infarction. After treatment with bed rest, aminophylline and sedation, he was discharged on March 13, 1946.

He was re-admitted on October 3, 1947, stating that for some weeks previously he began to notice, following excitement or exertion, a tight feeling under the sternum with radiation to his right arm, neck and shoulder. Nitroglycerin would more or less relieve him, but he became quite concerned with the increasing frequency of his attacks.

The physical examination at this time varied in no way from the one previously described. The patient was not in heart failure. Temperature on admission 98.6; pulse 68; respiration 18. The laboratory findings were not remarkable. The blood sedimentation rate was 15 mm/hr. corrected. His systolic blood pressure 130 mm Hg. diastolic 80. Serial electrocardiograms showed only the now fixed Q3-T3 pattern of the old posterior wall infarction.

The patient continued to complain of substernal discomfort with radiation to the right shoulder and the right parascapular region. He received nitroglycerin and, later, papaverine, and he felt sufficiently improved that he was furloughed home on November 24, 1947.

On January 14, 1948, before the expiration of his furlough, he was re-admitted because of an episode of severe substernal pain which persisted in spite of several doses of nitroglycerin. Again nothing remarkable was found on physical examination, and additional electrocardiograms remained unchanged. Detailed re-examination of the patient disclosed two definite trigger areas, one located in the right subacromial area, another one in the right paravertebral region at the level of D-3, both of which, upon pressure, elicited the original radiating pain to the right shoulder and neck. These two points were infil-

trated with 10 cc of 1 per cent procaine in normal saline solution on January 27, 1948, and again one week later. The patient became completely symptom free after the second injection and has remained asymptomatic.

Discussion

The results obtained in the two cases confirm the work of Travell and her co-workers. These investigators noted that trigger areas in association with coronary artery involvement are most frequently found in the major and minor pectoralis muscles and in the serratus anterior. However, somatic factors other than cardiac involvement can produce similar trigger areas. By carefully mapping out the trigger points in their cases, they were able to demonstrate certain patterns of reference. Thus, trigger areas in the myofascial structures of the parasternal region will cause pain mainly perceived subinternally. Trigger points in the region where the major and minor pectoral muscles overlap produce pain over the precordium, occasionally referred to the scapula and frequently to the medial epicondyle of the elbow and ulnar distribution in the forearm and hand. Trigger points in the lower portion of the pectoralis minor muscle at its origin, close to the ribs, produce pain perceived deep within the chest. Trigger areas in the rudimentary sternalis muscle will refer the pain up and down from the base of the neck to the epigastrium. Trigger points in the axillary portion of the serratus anterior will cause the pain to travel anteriorly almost to the sternum, and posteriorly to the interscapular line. It may also travel to the volar aspect of the arm down to the palm. The trigger areas in the serratus muscles may also cause pain on deep inspiration, or result in a constrictive feeling in the chest.

The knowledge of such trigger areas will facilitate a search by the examiner provided the patient is able to describe precisely the location of the spontaneous pain. However, without such information, careful palpation of the muscular structures of the chest and shoulder will suddenly reveal a small area of hyperalgesia, often severe enough to make the patient want to withdraw. Usually the patient will, then, declare either spontaneously or upon questioning, that pressure upon such area pro-

duces the very pain he is complaining of. The examining finger will, occasionally, discern a small indurated area or nodular structure. Although some of these hyperalgesic points can be cutaneous, they are more often found in the deeper structures.

What is a "trigger area?" Characteristically it is a small zone of hypersensitivity located in the somatic structure and giving rise, upon stimulation, by either pressure or needling, to a referred pain at a distance from the trigger point. In the case of the precordial muscles, however, it may circumscribe the trigger area itself, according to Travell et al.² Trigger mechanism causes true referred pain which does not follow a peripheral nerve in its distribution. Furthermore, trigger areas will refer the pain in a more or less constant pattern; but the underlying pathology, whether, as in our cases, cardiac disease, or, as again in other cases, a musculo-skeletal disorder, cannot be determined by them. The physiological events in trigger mechanism are as yet not too clearly understood, but it seems that a noxious stimulus originating in a viscus or other somatic structure can establish a trigger area within its zone of reference. Once such an area has been established it will perpetuate the pain impulses even though the original noxious stimulus may no longer act. The continued pain impulses seem to be the result of a vicious circle between the trigger areas and the sensorium and can, therefore, be abolished by interruption at the point of origin, provided, however, that no further impulses arise from the site of the original noxious stimulus.

Summary

1. Two cases of persistent chest and shoulder pain, one following mild coronary insufficiency, another following myocardial infarction have been described.
2. The mechanisms of "trigger zones" with referred pain as an explanation of the above phenomena, and their abolition by procaine injection are discussed.

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CANCER PAGE

Carcinoma of Pancreas

Carcinoma of pancreas constitutes about two per cent of all cancer. It is predominant in males in the ratio of four to one and the average age for both sexes is 60 years.

Two-thirds of all pancreatic malignancies are carcinoma of the head and the incidence of such malignancy is more than twice as great in diabetics with cancer as in cancer patients in general.

SYMPTOMS of carcinoma of the head of the pancreas are caused by compression or by invasion of neighboring organs. The onset is insidious with weight loss, asthenia, vague digestive disorders, gaseous distention, and nausea with later appearance of persistent jaundice with its accompanying symptoms of pruritus, clay-colored stools, dark urine and often enlargement of the liver. Pain is a frequent early, prominent, and persistent symptom in spite of the old teaching that painless jaundice meant carcinoma of the head of the pancreas.

DIAGNOSIS: The history, especially with weight loss, indigestion, gaseous distention and upper abdominal pain, even before onset of jaundice and with or without a palpable mass in the epigastrium, should point to cancer of the pancreas.

LABORATORY FINDINGS are helpful but inconclusive. Roentgenographic studies may show widening of the duodenal loop, with compression of the duodenum causing partial obstruction or ulceration of the concave margin of the duodenum.

The differential diagnosis can only be confirmed at exploratory laparotomy, which should not be deferred because of an indefinite clinical diagnosis.

CURATIVE TREATMENT consists of early exploratory laparotomy with resection of the head of the pancreas and the adjacent duodenum and anastomosis of the common duct, body of the pancreas and stomach to the jejunum. Palliative treatment for inoperable cases includes short-circuiting operations to relieve obstructive jaundice, and irradiation therapy.

CHILD WELFARE PAGE

A Study of Infant Deaths

Sometime before the end of February, 1949, physicians in Kansas who have reported the death of an infant under one year of age since the first of the year will receive a letter, or a questionnaire form, requesting further details about the circumstances of that death. Those letters, or questionnaires, will mark the opening of an intensive study of infant deaths by your committee.

WHY?

The infant death rate in Kansas is creditably low, both absolutely and in comparison with other states. Nonetheless, in another sense it is appallingly high, with about 27 out of every 1,000 live-born babies dying during the first year of life from various causes. In the past, it has been almost impossible to assess these causes accurately, due partly to a cumbersome and archaic method of statistical recording, partly to the fact that death diagnoses for infants have a tendency to be meaningless and uninformative.

It is probable that infant deaths can be reduced to a very much lower figure than now obtains. The first prerequisite for this is a knowledge of why infants are dying, and where, and how. Beginning January, 1949, a new method of recording deaths goes into effect, which for the first time will make every attempt to assign the death to the cause the physician feels is primarily responsible. There remains, therefore, only the need to know just what the reporting physician meant by his death diagnosis, and certain additional details about the child which past experience has shown to be of importance. Hence the questionnaire and letters.

HOW?

The machinery is necessarily complex. As soon as a death certificate is received at the central office of the State Board of Health in Topeka, the corresponding birth certificate will be matched to it. The considerable information contained on the two certificates will then be transferred to a numbered card, and further details requested either by the committee's questionnaire form, or by letter, or both, as the particular case should demand. The final data, when received, is added to the original card, following which the case is summarized by number, without the name of the reporting physician, and the summary is transmitted to the committee chairman. These summaries will be reviewed and discussed at the periodic meetings of the committee, and at the end of the year an analysis and report will be prepared for publication.

* * * * *

In the long run, the value of this study will be determined by the reception it meets with from Kansas physicians. At the very least, it should improve accuracy in diagnosing infants deaths, show up areas where additional hospital or nursing or educational services are needed, and develop important data on the factors that contribute to infant mortality. Returning the questionnaire is a purely voluntary action—which will make not only a contribution to the science of medicine but also a partial answer to some of the vociferous critics of organized medicine today, who think that government control is the only possible solution to society's health problems.

PRESIDENT'S PAGE

Dear Doctor:

By the time you read this you will have learned from the press the outcome of the Kansas Rural Health Program and perhaps other legislation in which you have been interested. The people of Kansas can well be proud of the activities of their Farm Organization in the interests of bettering health conditions.

I have heard it stated repeatedly that there never has been a time when legislators came to the state capitol so well informed about health measures requiring their consideration. Much of this credit goes to you and members of our allied groups. This is an example of what can be done with your leadership and your influence at the local level. It is a known fact that very few legislators change their minds on an issue after they get to Topeka.

At this point I would like to pay special tribute to those men and women who so aptly absorb the medical viewpoint and who are so adept in relaying these views to the laity. It really is an inspiring revelation to sit by and hear such a friend tell our story to one of his friends. In my opinion the future of medical services in the United States depends upon getting the story to the people. I am equally convinced that the virtues of our present medical system can be carried more effectively to the individual voters by such non-medical friends. It then rests with us to furnish information to such valuable intermediaries.

A conference of all state medical society presidents at Chicago to formulate plans for the expenditure of the \$25 special assessment fund of the American Medical Association is in my opinion a good sign. It is an indication that the A.M.A. hopes to establish a systematic means of getting its educational program direct to the people by way of the state and local societies.

I want to express my personal thanks for the interest you have taken in Society affairs. I look over the attendance at the various meetings we hold and wonder who will take the place of this or that one who has given so unselfishly of his time to advance the benefits of medical service in Kansas. I cannot answer the question, but I know full well it will be a fully qualified enthusiastic member of the profession who is sincerely interested in the welfare of his patients.

From time to time comes news from our Medical Auxiliary and our Medical Assistants' Society. I hope you are aware of the wide spread influence of these organizations. Truly they deserve our support and encouragement.

An exceptionally fine program is being planned by the Shawnee County Medical Society for our 90th Annual Session in Topeka, May 9, 10, 11 and 12. I hope you are making plans to attend. Between now and then we will keep you posted on matters of real importance.

Sincerely,


President.

EDITORIAL COMMENT

Approach to Geriatrics

Shortly before the war a physician inaugurated a geriatric clinic in connection with an eastern hospital. His observations on problems of old age, as recently published in a medical journal, may not contribute much to the fund of scientific knowledge but are so refreshing because of his attitude toward patients that it seemed appropriate to summarize them.

For instance, the idea that an old person's chief complaints may have little to do with what really affects his physical condition is neither original nor startling. The thought is pursued, however, with the reminder that the patient has outlived his parents, to whom he formerly went in time of trouble. Many of his friends are gone and he is now forced to turn for advice to younger people who are often reluctant to listen. In this awkward situation he comes fearfully and hopefully to a medical advisor. In the practice of geriatrics may be seen the greatest need for that sound and leisurely service that characterized the old time family doctor. "It takes an endless amount of time," this physician said, "much insight and ingenuity, tolerance and patience. The reward is in making the last third of life worthwhile to many persons."

Old age is peculiarly the field of chronic diseases. The disabilities and deficits of early life are brought along into old age and new ones appear. Many conditions will prevail no matter how much progress is made in this specialty. On that basis most physicians have dismissed the patient with a remark to the effect that he may expect infirmities at his age.

The geriatrician holds, however, that this is not sound reasoning. He believes the patient can adjust himself to his disabilities and that even in the presence of many chronic diseases, neuropsychiatric disturbances and cardiovascular limitations, modern medical care is sufficiently effective to permit life to be lived at reasonably tolerable levels. "Life ends for many old people as naturally as it began, with little distress, in the midst of full, forward-looking participation in society, with no period of custodial care or sitting on the side-line benches. The geriatrician believes that this happy ending can be achieved by many more."

The detection of diseases in old people is not difficult. A search is likely to be only too revealing. The difficulty is rather one of determining which of the symptoms is actually important. Much that passes for senility turns out to be merely physical unfitness. Rehabilitation among old people is "as

exciting and as rewarding as that with war casualties." Mental deterioration is often nothing more than a loss of interest in living. If that can be restored many old persons become surprisingly alert.

Almost every old person suffers from malnutrition. This is due to many factors, including the possibility that aged persons may require greater concentrations of certain food factors than was formerly considered necessary. It is often difficult to persuade these patients to adhere to a new diet "but the results are worth all the required patience and humor and ingenuity and preaching."

Suggestions for therapy are of a general nature but show a genuine interest in improving the mental as well as the physical well-being of the elderly patient. Old age clubs are suggested where lonely idle persons may go for games and dancing. Vacation projects are helpful because most old people are almost constantly confined within their homes. Summer day camp club projects on public playgrounds can be utilized for those unable to travel. Best, and most expensive, would be an old age center with a gymnasium and swimming pool, hobby work, and psychological counselling services. Here the aged could go, the rich and the poor, to find ways in which they could make their last years interesting.

The A.M.A. Assessment

Distortions in the publicity concerning the \$25 American Medical Association assessment have made it appear that the medical profession proposes to match funds with the government in a battle of dollars in which the winner takes over medical care for the nation. In this gargantuan warfare, it has been said, the public will now be bombarded with propaganda from both sides. Washington will tell the people the medical profession presents the worst type of capitalistic monopoly existing in the nation. The medical profession will shout "Communism."

The profession has no control over the statements of those who would bring about federal control of medical care. There is no way of knowing how far they will go in false accusations and in misstatement of facts. The accused still has a right to reply to charges made against him, and it is from that unhappy position that the A.M.A. proposes to speak to the nation.

First, the \$25 assessment will not be used to purchase pressure lobbying in Washington. It is rather a fund that will enable the medical profession to

contradict lies and to tell the public the truth concerning its ideals and achievements. Who knows better than the profession itself what the science of medicine has accomplished? The House of Delegates ordered the A.M.A. to tell America this story. It will be a story of the glory of free enterprise, of longer life and reduced illness, the story of a miracle in modern times that promises even greater things in the days to come. It is a story that directly affects the lives of every man, woman and child.

The story of the A.M.A. will be neither hesitant nor defensive. It shall be a forward looking program designed to give our nation, through modern scientific and economic methods, the finest medical care in the world. It is positive in its approach, showing that voluntary prepaid medical care will do everything promised by social planners in Washington but more effectively and more economically than they could hope to achieve. The message will be dignified and will return to the public that confidence in the American physician that he enjoyed before his reputation was maligned through propaganda. It will show the medical profession has accepted and is discharging with honor its responsibility to serve the people. It is the story of the glories of American medicine.

All these are ideals in which the Kansas Medical Society believes. The A.M.A. program will be supported by the physicians of this state and at the same time this Society will continue its public service for the people of Kansas. The Kansas plan for supplying our people with adequate medical care will be carried forward until every need has been met. Cooperation with Kansas Blue Shield will continue and so will the work with the Kansas State Board of Health. This Society recognizes its immediate responsibility to the people of Kansas and pledges to discharge those obligations in all phases. In this effort the A.M.A. will be the spokesman but its voice will reflect the ideals of the physicians in Kansas, and in that knowledge the Kansas Medical Society pledges its support.

Frontier Doctor

Another phase of Kansas history is currently receiving nation-wide attention. This is found in the book *Frontier Doctor* by Samuel J. Crumbine, M.D., in which the first executive secretary and director of the Kansas State Board of Health relives his experiences. Dr. Crumbine's autobiography appeared of sufficient national importance for the *New Yorker* to use him as the subject of one of its profiles. For physicians in Kansas, many of whom lived through the events described in this book, there will be a very personal interest.

The story, simply told, gives an account of Dr. Crumbine's life in this state, first as a physician in Dodge City and, beginning in 1900, as a member of the Kansas State Board of Health. In 1904 he moved to Topeka to become its first secretary and executive officer. The entire budget for the Kansas State Board of Health for that year, including all money available for salaries and services, was \$3,080. There were virtually no public health laws at that time and prior to Dr. Crumbine's acceptance of this position Kansas had made no effort to regulate public health problems.

Then came reforms—dealing with foods and drugs and shortly thereafter the famous "Swat the Fly" campaign. On a personally conducted tour in a canoe from Topeka to Lawrence, during which he collected water samples every half mile and, incidentally, a severe sunburn, he exploded the superstition that running water became purified every seven miles. This was the beginning of regulations governing sanitation and sewage disposal in Kansas.

Most dramatic, perhaps, is his account of the abolishment of the common drinking cup. There is a bit of gruesome reading in his description of the persons who drank from a common cup in a railroad coach. This experience, vividly described in the book, led to a regulation reverberating across the country. In spite of pressure from all sides, Dr. Crumbine made his regulations stick and one source of spreading infection was removed when the common drinking cup went out of existence.

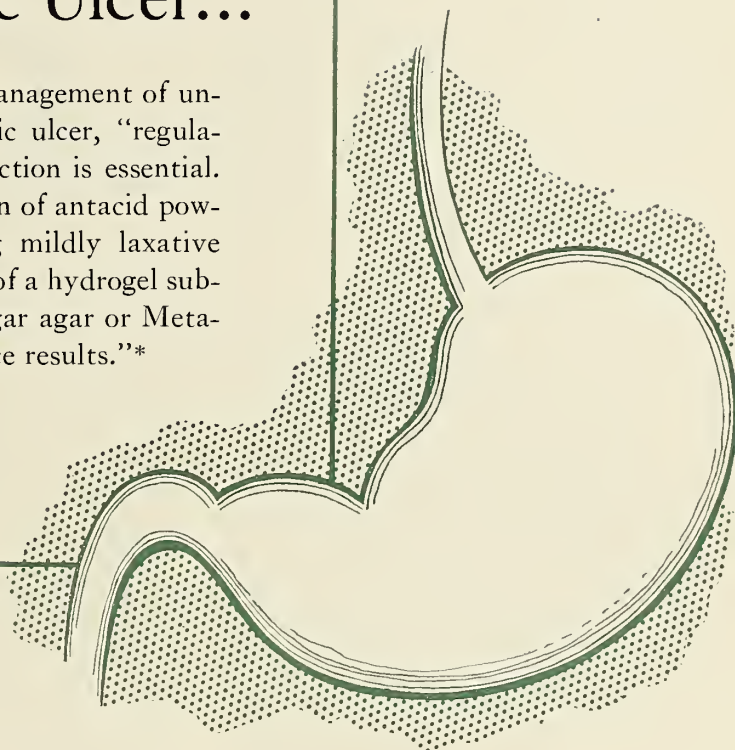
The book covers his efforts to control tuberculosis, venereal disease, smallpox and typhoid fever. It deals also with related problems of juvenile delinquency and his account of World War I as it affected Kansas. Although told in simple language, the book has vitality that comes from its content. Its drama grows out of mankind's fight for existence and his quest to eliminate illness. It isn't all tragic or sensational, however. In the book are many humorous anecdotes, as note his brief but successful venture into hypnotism and the account of the preacher's dog.

Many have paid high tribute to Dr. Crumbine. William Allen White listed Kansas heroes such as John Brown and General Eisenhower and added the name of Dr. Crumbine to that group. The *New Yorker* said, "His campaign and inspirations have jarred the personal habits of every adult in the world."

As for the physicians of Kansas, they take a special pride because of what Dr. Crumbine has achieved in public health because these pioneering advancements became realities in this state.

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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

*Gerendasy, J.: Modern Treatment of Peptic Ulcer, J. M. Soc. New Jersey 43:84 (March) 1946.

Change on Editorial Board

Dr. Don C. Wakeman, Topeka, who has been serving as a member of the Editorial Board of the Journal of the Kansas Medical Society since his appointment by the Council in May, 1938, recently tendered his resignation to the Board. Dr. Richard Greer, Topeka, was named to fill the unexpired portion of Dr. Wakeman's term, to May, 1950.

Members of the Society will share the regret of the Editorial Board on Dr. Wakeman's resignation. Through the past ten years his ideas and suggestions have contributed substantially to the creation of the Journal in its present form. He has spent many hours preparing editorials, editing and revising scientific material and reading proof, and his ability and willingness to serve made him an esteemed member of the Board.

Dr. Greer has been engaged in practice in Topeka since his return from service with the Army medical corps. Since he is a general practitioner, he will bring the viewpoint of that group to the Board and his services will be most valuable.

Activity in Combating Heart Disease

The Committee on the Study of Heart Disease of the Kansas Medical Society has had an important part in two recent state achievements in that field, and both projects will be carried on with the support and advice of that committee. The announcement of these two events is especially appropriate now since the week of February 14 to 21 has been designated National Heart Week by the American Heart Association.

First of the two is the organization of the Kansas Heart Association, designed to become a component part of the American Heart Association. Second is the announcement that final approval for the establishment of a state program of heart disease control, through the use of a federal grant of \$15,000, has been given by the Kansas State Board of Health.

The organization meeting of the Kansas Heart Association was held at the Broadview Hotel, Emporia, January 7. The articles of incorporation state that this non-profit corporation will be devoted to the study of the heart and the causes, diagnosis, prevention and treatment of its disorders and attendant disorders.

The following officers were named to serve until the time set for the annual meeting, the first Thursday in October: president, Dr. Porter Clark, Independence; president-elect, Dr. John Porter, Concordia; vice president, Dr. Edward J. Ryan, Emporia; secretary, Mr. Frank Sullivan, Topeka.

Fourteen Kansas physicians have been appointed to serve as members of the board of directors. They are: Doctors Franklin D. Murphy, Kansas City;

Porter Clark, Independence; John M. Porter, Concordia; Philip W. Morgan, Emporia; Clarence W. Erickson, Pittsburg; Lee H. Leger, Kansas City; Charles Mount, Winter Hospital, Topeka; Ralph Canuteson, Lawrence; Edward J. Ryan, Emporia; Fred J. McEwen, Wichita; Kenneth A. Druet, Salina; Harold Jones, Winfield; Don C. Wakeman, Topeka; and L. O. E. Peckenschneider, Halstead.

In addition, the following ten laymen will also serve as directors: Governor Frank Carlson, Topeka; Frank Sullivan, Topeka; Harry Darby, Kansas City; Jack Harris, Hutchinson; Willard J. Breidenthal, Kansas City; Lester McCoy, Garden City; Earl Schaefer, Wichita; Alf M. Landon, Topeka; Walter A. Huxman, Topeka; Clarence V. Beck, Emporia.

The new program of heart disease control, approved by both the Committee on the Study of Heart Disease and the Kansas State Board of Health, will be directed by Dr. W. L. Cochran of the University of Kansas Medical Center. Three consultants, a radiologist, a pediatrician and a surgeon, will assist him and a staff to consist of a field representative, a stenographer and a clerk will be provided. Approximately \$2,600 will be spent for equipment.

The program will function under the guidance of the Society's committee, with Dr. Philip W. Morgan, Emporia, as chairman. His extensive study of photofluorographic films of heart disease cases will be continued, and an attempt will be made to establish an accurate state registry of heart disease cases.

The project, as outlined by the committee, will undertake development of standards and forms of obtaining accurate diagnoses, the study of case films, and a series of lectures on cardiovascular diseases, to be accomplished with the co-operation of the University of Kansas Medical Center and the Kansas Medical Society. The work will also include the development of a congenital heart disease program and a rheumatic disease control project.

American Academy of General Practice

Applications for membership in the American Academy of General Practice are now being received from Kansas physicians by Dr. Albert C. Harms, 905 North Seventh Street, Kansas City, Kansas, secretary of the newly-organized Kansas chapter. Although physicians in this state formerly made application through the national headquarters office in Kansas City, Missouri, they are no longer eligible to secure membership in that way since the constitution of the new organization provides that applications must be channeled through constituent state chapters whenever possible.



Old Age NEED NOT MEAN *Chronic Illness*

Clinical studies^{1,2,3} demonstrate that the results of inadequate dietaries are insidiously cumulative and may not become evident for many years. Many of the afflictions of old age are now attributed to lifelong faulty dietaries and no longer need be the inevitable accompaniment of advanced years.

In advanced age the wisdom of dietaries high in vitamins, minerals, and protein, low in fat, and moderate in carbohydrate, is pointedly emphasized in reported clinical studies. Liberal amounts of vitamin B complex and of calcium, in particular, are important for increasing

the appetite and for supporting the calcium integrity of the skeletal structure.

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¹ Boss, E.P.: The Physiologic and Clinical Phenomena of Aging, New Orleans M. & S. J. 57:64 (Aug.) 1944.

² Spies, T.D., and Collins, H.S.: Observation on Aging in Nutritionally Deficient Persons, J. Gerontol. 1:33 (Jan.) 1946.

³ Stieglitz, E.J.: Therapy of the Aged, M. Ann. District of Columbia 17:197 (Apr.) 1948.

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IRON	12 mg.	COPPER	0.5 mg.

*Based on average reported values for milk.

President of Blue Shield Resigns

Shortly after the beginning of the new year Dr. Barrett A. Nelson resigned as president of Kansas Physicians' Service, whereupon Dr. Conrad M. Barnes, vice president, assumed the responsibilities of this office until the election at the coming annual meeting in May. Dr. Nelson's advice to Blue Shield was so pertinent to this particular time and was so excellently expressed that the Council of the Kansas Medical Society requested publication for this letter so that all members might have the benefit of his suggestions. The letter follows:

January 5, 1949

To the Board of Trustees,
Kansas Physicians' Service.

My resignation as president of Kansas Physicians' Service is hereby tendered, effective immediately.

The increasing pressure of long neglected personal affairs, particularly administration of our clinical group at Manhattan, had convinced me I should relinquish the office at the annual meeting in May. It now appears that the beginning of the new year is a propitious time for Dr. Conrad Barnes to take over, to familiarize himself with procedures and have close touch with any re-organization or revised administrative structure the board may order at the coming session.

In retiring I must express the tremendous pleasure and gratification which have been mine in playing some small part along with you in planning what is probably the most important development in medical practice today, heightened by the loyalty and co-operation of you gentlemen on the board who have been partners in this development. Let me urge you to continue your efforts to intelligently direct the growth of this instrument for more effective distribution of good medical care. May it further the best interests of our patients, always with recognition that those interests are best served by active control in the hands of those most qualified to understand and direct distribution of medical service, the medical profession.

To that end I would earnestly urge that you continue to exert every influence to maintain close interest, active affiliation, continued sponsorship, support and active participation of the Kansas Medical Society with Kansas Physicians' Service. In no other way can there be stemming of the encroachment of fallacious theories of control and direction of medical practice by those who would curtail and regiment the work of our profession.

This is particularly important now with the disturbing activities in the national scene, especially following the ill-advised actions of the American Medical Association in blocking an effective national program for Blue Shield and in displaying such awful public relations technique as to present a

\$3,500,000 "war fund" so as to cause terrific resentment by much of the general public and many public officials. There is much reason to fear our efforts to forestall the calamity of national socialization of medicine will shortly culminate in total failure. Our only hope, if any, lies in pressing our voluntary plans on a sound, workable basis, trying to retain autonomy in the medical profession.

You have a capable, competent, diligent executive committee. Doctors Barnes, Bernstorff, Blake and Lawson were selected after careful combing of our membership and were picked as outstanding and especially fitted for their allotted tasks. Give them your support, the benefit of your judgment and counsel. Extend sympathetic understanding and confidence when they must take action in your interest. And above all, maintain, each of you, your personal interest and understanding of the important fundamental principles and the underlying philosophy of Blue Shield.

With my deepest loyalty and very best wishes,

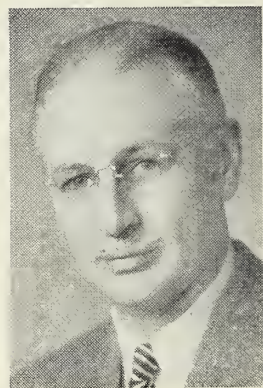
Sincerely yours,

/s/ Barrett A. Nelson, M.D.

* * *

The success of any group activity depends on the support and active participation of the members of that group, but in every instance there will be found a guiding genius who is most directly responsible. Nowhere has this been illustrated more clearly than in the Kansas Blue Shield program. From its inception Dr. Nelson has planned and guided the course of this voluntary prepaid medical care program. Years ago, as chairman of the Committee on Medical Economics, he studied the theory and practices of every plan in existence. He methodically discarded the hazardous and unsound principles of each and retained the best they had to offer.

When his committee was satisfied, Dr. Nelson then assumed a personal responsibility for completely educating the medical profession in this new theory. He traveled literally thousands of miles to meet with component societies all over Kansas, and as chairman of the committee he led this public service project carefully through the debate in the House of Delegates. Then followed Dr. Nelson's personal attention to the progress of the enabling act and its hazardous course through the legislature during the session of 1945. Immediately thereafter



B. A. Nelson, M.D.



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came the endless details that surround the birth of a corporation and from that day until his resignation was received Dr. Nelson spent uncounted hours in the interests of this program. His prominence in the field of prepaid medical care rapidly transcended the boundaries of this state and shortly the president of Kansas Physicians' Service became vice president of the Associated Medical Care Plans of America.

The Council of the Kansas Medical Society, in tribute to Dr. Nelson for his epoch-making achievements and his pioneering in this field of public service, unanimously passed the following resolution at its meeting in Topeka on Sunday, January 9, 1949:

"We, the Council of the Kansas Medical Society, regret learning of your resignation as president of Kansas Physicians' Service and realize the loss occasioned by your retirement from this position.

"In grateful recognition, for the innumerable hours you have given toward planning, organizing and guiding Kansas Physicians' Service, for your contribution to the people of this state in providing them with attractive and sound methods of budgeting their medical expense, and for the honor your services have afforded the Kansas Medical Society, we, the Council, wish to express our thanks individually and in behalf of each member of the Society."

Publication on Cancer Research

A scientific journal reporting research directed toward the understanding and conquest of cancer, known as *Cancer Research*, is now being published at the University of Chicago. Dr. Paul E. Steiner, professor of pathology, edits the publication which is the official organ of the American Association for Cancer Research. The journal, which is now in its ninth year, was formerly published by the Ann Arbor Press.

Postgraduate Courses at K. U.

Information on two postgraduate courses, one on Internal Medicine, Psychiatry and Dermatology and the other on Ophthalmology and Otolaryngology, has recently been released from the University of Kansas Medical Center.

Guest speakers for the course on Internal Medicine, Psychiatry and Dermatology, to be held March 28 to 31, inclusive, are: Dr. Elmer L. Sevringhaus, director of clinical research, Hoffman-LaRoche, Inc.; Dr. John M. Lyon, professor of psychiatry and director of the Psychiatric Liaison Department, University of Colorado; Dr. C. J. Watson, professor of medicine, University of Minnesota.

The postgraduate course on Ophthalmology and Otolaryngology will be offered April 11 to 15, inclusive, the first three days devoted to otolaryn-

gology and the last two to ophthalmology. Among the speakers is Dr. Albert D. Ruedemann, professor of ophthalmology, Wayne University, Detroit, who was a member of the guest faculty for this course two years ago and is returning this year at the request of many who attended then. Other speakers will be Dr. Arthur C. Jones, an officer of the American Academy and for many years a lecturer at the Mid-Winter Postgraduate Course in California; Dr. Benjamin H. Shuster, professor of otolaryngology, Graduate School of Medicine, University of Pennsylvania; Dr. Stuart Cullen, professor of surgery and anesthesiology, University of Iowa.

New Doctors of Medicine

The Kansas State Board of Medical Registration and Examination announces that licenses to practice medicine in Kansas were recently issued to 28 applicants. Eight doctors of medicine were granted licenses after passing an examination given by the Board on January 8, and 20 were licensed by reciprocity.

Those licensed by examination were Doctors Val Jean Brown, Wichita; Robert Lucien Demke, Coldwater; Charles W. L. Johnson, Houston, Texas; Heinz Richard Landmann, Topeka; Ray Arnold Lawn, Fort Scott; Robert Monroe Owensby, Mankato; Joseph W. Pavelsek, Oberlin; Wilburn H. Weddington, Kansas City, Missouri.

Reciprocal licenses were issued to Doctors Henley Neale Barnes, Topeka; John Lester Berry, Topeka; Leslie Henry Cobb, Mulvane; Thomas Cranford Ensey, Wichita; Vernon Warren Filley, Topeka; Eldon Mayo Fillman, Topeka; Willard C. Goodpasture, Wichita; Howard Unger Kennedy, Topeka; Edwin Roosevelt King, Chicago, Illinois; William F. McGuire, Wichita; Alfred Otto Mazat, Wichita; John Roger Newstedt, Winfield; Carl Emil Olson, Fowler; Andrew J. Randolph, Topeka; Richard S. Roberts, Wichita; Paul J. Sanfilippo, New York City; Robert Goodrich Smith, Topeka; Eldred Victor Thiehoff, Kansas City; Bernard C. Trowbridge, Kansas City, Missouri; Irving Abraham Wien, Kansas City, Missouri.


The United States has more doctors in proportion to population than any other country except Jewish Palestine, where there are great numbers of refugee physicians, according to a recent A.M.A. release. Our rate of 710 persons for each physician may be compared to 260 for Jewish Palestine, 870 for Great Britain, 950 for Denmark, 970 for Canada, 1,100 for Australia, Switzerland, Sweden, Spain, Norway, and the Netherlands, 1,300 for France, 1,500 for Eire and Bulgaria, 2,200 for Finland, 2,400 for the Union of South Africa, 4,200 for Egypt, and 25,000 for China.

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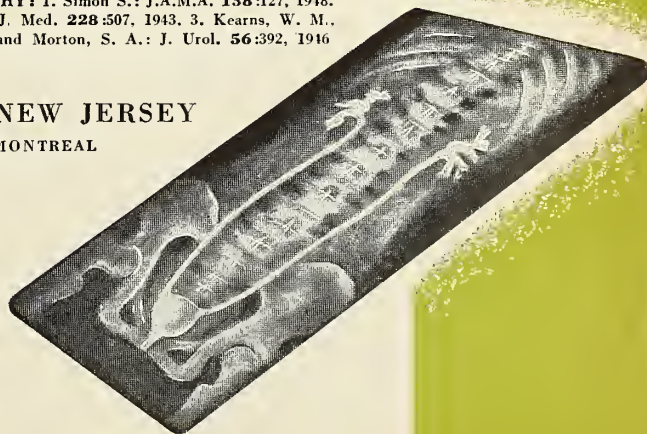
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2. Pearman, R. O.: New England J. Med. 228:507, 1943. 3. Kearns, W. M.,
Heike, H., and Morton, S. A.: J. Urol. 56:392, 1946

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Case Reports from the University of Kansas Medical Center*

Edited by R. E. Stowell, M.D., and E. B. Taft, M.D.

Dr. Stowell: The presentation of case histories and laboratory findings on these two patients with diagnoses of malignant lymphoma will be followed by their general discussion, including chemotherapy of tumors.

Although there is still disagreement as to whether Hodgkin's disease is a true neoplasm, it is a specific entity of unknown etiology. The peak incidence is between 18 and 38 years and it is twice as common in adult men as in women. In one large autopsy series, the incidence was .24 per cent.

Tumor Clinic Case No. 48-33

History: J. H., a 67-year-old white woman, was admitted to the University of Kansas Medical Center for the third time in 1948 on October 18. On her first admission in February she complained of exertional dyspnea, abdominal distention, swelling of the feet and ankles, and axillary and inguinal adenopathy. On physical examination she was also found to have fluid in her right chest. A lymph node was biopsied and Hodgkin's disease was diagnosed. She received x-ray therapy and a thoracentesis was done. She was dismissed as improved. In May she re-entered the hospital with similar complaints. She again received x-ray therapy and another thoracentesis was performed. No malignant cells were found in the sediment of the opalescent, milky fluid. There was no evidence of involvement of mediastinal lymph nodes by fluoroscopy. She improved and was dismissed on the 15th hospital day. On the present admission her chief complaint was of severe back pain in the left lumbar region which had been present approximately one month and which had been increasing in severity. The pain at the time of admission was almost constant and became excruciating with movement. She also had some other vague complaints of nausea and difficulty in swallowing.

Physical Examination: No lymph nodes were palpable on the present admission except for a few small firm nodes in the right posterior cervical chain. The fluid in her right chest had reaccumulated.

Laboratory Studies: These were not unusual except for a white blood cell count of 10,100 with 77 per cent polymorphonuclear neutrophilic leukocytes.

X-ray Studies: Chest films on various occasions showed fluid levels up to the seventh rib on the right. There never has been an increase in the mediastinal shadow. X-ray films of the spine on the present admission showed marked compression of the first lumbar vertebra and moderate compression

of the eighth dorsal vertebra. Other than the compression there was little evidence of disease.

Course: The patient was treated with four successive daily doses of nitrogen mustard therapy. Since then she has felt better. Her pain is almost non-existent and she wants to go home.

Dr. Summerville: The biopsied lymph node in this case presents a picture typical of Hodgkin's granuloma. Under high magnification one can see the marked pleomorphism with the various characteristic types of cells, entirely replacing the normal architecture of the lymph node. Lymphocytes and plasma cells are present in large numbers, and polymorphonuclear neutrophilic and eosinophilic leukocytes in moderate numbers. Reticulo-endothelial cells are prominent. Most important are the large Reed-Sternberg cells pathognomonic of Hodgkin's disease, with single, lobulated or multiple nuclei, prominent nucleoli and rather dark cytoplasm. Under low power one can more readily see the destruction of the architecture and the presence of large amounts of collagenous fibrous tissue within the node, other characteristic features of this disease. One cannot find a single lymphoid follicle remaining in this node.

Dr. Tice: Since my experience with the involvement of bone by Hodgkin's disease is limited to not more than four or five cases, I am not sure, but suspect that the collapse of these vertebral bodies is the result of invasion by Hodgkin's tissue. As you know, there is not much difference in the roentgenologic picture of metastatic carcinoma and Hodgkin's disease involving bone. I thought when I first saw this patient that her pain was caused by pressure of involved lymph nodes on peripheral nerves. One could readily palpate the masses in her abdomen which almost certainly represented enlarged para-aortic lymph nodes. How to explain the fluid in her right chest is somewhat difficult since there is usually obvious involvement of mediastinal lymph nodes with pleural effusion in Hodgkin's disease.

I think it is of interest that one sees Hodgkin's disease in various age groups. The present patient is a woman of 65. Perhaps the next case we shall see will be a child of five or six. It is a disease which is no respecter of person or age. I think the course of the disease in patients in the third and fourth decade is essentially similar to that in the older age groups. I can recall two patients, both women, one 18 and one 40 years of age, in whom the disease has been present for at least six years. It is my impression that in children the disease progresses somewhat more rapidly.

*Cancer teaching activities aided by a grant from the National Cancer Institute.

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Tumor Clinic Case No. 48-34

Discussion of Cases

History: A. M., a 42-year-old white man, was first admitted to the University of Kansas Medical Center in July 1948 with complaints of a choking sensation and of coughing up small amounts of blood-tinged sputum for eight months. Initially he noted a marked swelling at the base of his neck. This seemed to subside somewhat during the course of his illness but the choking sensation became worse as his disease progressed. On physical examination at that time there was questionable swelling of the base of the neck with numerous small, firm palpable cervical lymph nodes. There was widening of the mediastinal dullness to percussion. By x-ray and fluoroscopy the mediastinum was found markedly increased by a lobulated shadow which occupied the midmediastinum. Bronchograms were normal. A lymph node biopsy revealed non-specific lymphadenitis. After a course of x-ray therapy he was dismissed in August and he returned to work. He has noted some swelling at the base of his neck and has found that if he exercises more than usual he has pains in his cervical and pectoral muscles. He tires more readily than he used to and he still has some shortness of breath. He has gained eight pounds in weight since his previous admission. He returned to the hospital for nitrogen mustard therapy.

Physical Examination: The entire base of the neck was diffusely swollen but only one small lymph node on the right was palpable at that time. There was still some apparent widening of the mediastinal dullness.

Laboratory Studies: These were not unusual except for a white blood cell count of 9,450 with 91 per cent polymorphonuclear neutrophilic leukocytes.

X-ray Studies: The mediastinal shadow had decreased markedly since the previous admission.

Course: Since biopsies and bronchograms were negative and the x-ray picture of the mediastinal mass was typical of lymphoma it was decided that a course of x-ray therapy was justified in the attempt to establish a diagnosis. After an initial small dose, he received a course of therapy totaling 2500 r to the middle of his chest. He has been followed at intervals of two to three weeks in the outpatient department. He is at present receiving nitrogen mustard therapy.

Dr. Summerville: The biopsy slide in this case is a contrast to that from the previous patient. The characteristic feature here is proliferation of reticulo-endothelial cells from the sinuses of the lymph node, representing an irritative response. There is no destruction of the architecture of the node and no cells resembling Reed-Sternberg cells.

Dr. Tice: The first thing I think of when I see a roentgenogram with a lobulated mass in the mediastinum which projects on both sides in the usual view is that it is probably located in the midmediastinum rather than anteriorly or posteriorly. When a lateral view confirms this impression, one next thinks of Hodgkin's disease or lymphosarcoma. The anterior mediastinal masses include teratoma or thymoma. In the posterior mediastinum tumors are usually derived from peripheral or sympathetic nerves. These groups comprise the common mediastinal tumors. Thus, whenever I see a mass which is lobulated and extends on both sides of the midline in the mediastinum, it is a lymphoma until proven otherwise. I do not think one can differentiate the shadows of Hodgkin's disease from lymphosarcoma in such a situation.

Dr. Stowell: May the therapeutic response of the patient give further indication of the type of tumor?

Dr. Tice: This patient had to have a rather large dose of 2500 r, or about four to five erythemas. From the response of the nodes it might be either Hodgkin's disease or lymphosarcoma; one is as sensitive as the other. However, the tumor in this case would not seem to have been especially radio-sensitive since the mediastinum is not yet normal.

It is important to remember in the treatment of such patients that one must start radio-therapy with a relatively small dose of radiation since there are tumors such as the leukosarcoma which will disappear with doses as small as 100-200 r. One does not want to produce so much necrotic tissue that it will cause the patient's death. If he does not get sick or toxic from an initial small dose, we give him a large dose on his next visit.

Dr. Stowell: What further therapy do you plan for these patients? Will you use nitrogen mustards alone, or in combination with further x-ray?

Dr. Tice: I am not entirely sure. The first patient has already had a large amount of radiation to various parts of her body, but we could probably have obtained a further response with more radiation. However, since the literature reports the best results with nitrogen mustards in Hodgkin's disease, we are anxious to try them. I am not entirely sure that she will be carried as long on such therapy as she has been in the past on x-ray. Time alone will tell. She has responded so far exceptionally well to the therapy both as far as her pain is concerned and as far as untoward reactions from the drug such as neutropenia. In the second patient I feel that we were probably justified in a therapeutic trial of x-ray since the mediastinal mass has decreased in size. It has been only two months since his last treatment, but he has not been too comfortable so

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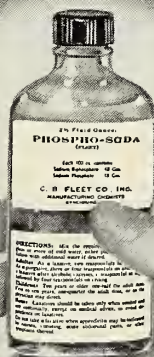
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that we feel we might produce a beneficial reaction in him with nitrogen mustards.

Nitrogen mustards are one of the newer forms of chemotherapy. There are two products in use, methyl-bis- and methyl-tris (β -chloroethyl) amine hydrochloride. Methyl-tris-, the form we use, is the more commonly given and seems to be less toxic. The standard dose is 0.1 mgm. per kgm. of body weight. Such a dose is usually administered on each of four successive days. Our procedure is to start an intravenous infusion and then to inject the freshly mixed drug into the tubing through which the intravenous fluid is flowing rapidly. It is important that it not escape from the vein since it is a very caustic drug.

I suspect that nitrogen mustards have been tried in every type of malignancy by one or another investigator. The patients who have shown significant response have been patients with Hodgkin's disease and some with lung tumors. Dr. Martin of the Memorial Hospital in New York has reported marked temporary remission of symptoms in certain cases of inoperable lung carcinoma. A few cases of lymphosarcoma have also been reported to have shown a response to the drug. We have previously tried the drug in hopeless cases, including a patient with far advanced melanoma and another with a carcinoma of the mouth. Nitrogen mustards did not help them. Today's first patient is the first case in which I have observed a response—definite relief from pain. When she entered the hospital she required one quarter grain of morphine five to six times per day because of pain. Now she has none; in fact she wants to go home.

Dr. Wilson: Nitrogen mustards are a product of the war. The only difference between the nitrogen mustards used therapeutically and the vesicant war gases is that nitrogen replaces the sulfur. Nitrogen mustards like their sulfur counterparts are contact vesicants. Their physiological activity is the result of an intramolecular cyclization of the compound which is unstable but which is so reactive that the effect of an intravenous injection lasts less than five minutes. If one injects the drug into a peripheral vein and prevents the flow of blood into a limb by applying a tourniquet to the part for five minutes, there will be no effect on the part when the tourniquet is released. Thus, it is given rapidly immediately after mixing. It apparently works because of a nucleo-toxic action which inhibits mitosis and produces chromosomal abnormalities. The severity of the response is directly related to the dose of the drug and the susceptibility of the cell is apparently related to the degree of its proliferative activity. The tissues that are most affected by nitrogen mustards

are the lymphatic tissue, the bone marrow and the mucosa of the gastrointestinal tract. This last is readily apparent because of the profuse vomiting which occurs in most patients some three hours after the injection. There is one disease in addition to those mentioned by Dr. Tice in which there have been fairly good results, and that is polycythemia vera.

There were three groups in the country who first experimented with nitrogen mustards as therapeutic agents. In Dr. Wintrobe's series, and the results were similar in the others, the agents seemed to produce the best results in Hodgkin's disease. In 100 cases of Hodgkin's disease, 61 had good response, 18 fair response, and 21 no response. In all other diseases in which this drug was tested by these groups, the response was generally discouraging with the exception of some lymphomas. Thus it seems that this is another example of the channeling of a therapeutic agent to but one or two diseases.

The hematological effects of this drug are of interest. The striking decrease in leukocytes in the peripheral blood is most remarkable. I shall never forget the first time I used the drug. The patient had polycythemia vera and initially had a white blood cell count of nearly 20,000 with a platelet count of over 800,000. After therapy his count began to fall until his white blood cell count reached 1600 and his platelets 66,000. I would ask, "How do you feel?" and he would reply, "Wonderful, Dr. Wilson. I never felt better in my life!" I fully expected him to die, but, fortunately, no ill effects were observed. This response is typical of that in most patients after nitrogen mustard therapy. The decrease in white blood cells primarily affects the neutrophilic polymorphonuclear leukocytes and the maximum effect occurs between the 15th and 25th day. Surprisingly enough most patients do not get symptoms from their agranulocytosis nor do they seem to develop ulcers or infections so commonly seen in patients with agranulocytosis from other causes.

The emetic effect on the gastro-intestinal tract is most striking and can readily be seen if one observes a patient approximately three hours after the injection is given. Anatomically, there appears to be a demonstrable effect directly on the epithelial cells and the gastro-intestinal mucosa. There is edema which elevates the epithelium. The lymphatics of the villi become dilated. The epithelial cells become vesiculated and after 24 hours, quite bizarre in appearance.

Dr. Stowell: Would you like to summarize the uses and effectiveness of some of the other chemotherapeutic agents being used in hematologic disorders?

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Dr. Wilson: Urethane probably is best used in the treatment of chronic myelogenous leukemia and then only after a remission has been achieved by the use of x-ray therapy. Apparently it will in certain cases maintain the remission for a considerable period. The most important reason for lack of success with this drug is that patients are apt to stop taking the drug because of nausea which occurs with prolonged use. Urethane also may be of some use in multiple myeloma.

Stilbamidine is another drug which has been found to be effective in some cases of multiple myeloma. It seems likely that in this disease stilbamidine works best in conjunction with small amounts of urethane.

We should not omit discussion of the radioactive isotopes. P^{32} or radioactive phosphorus has been the most widely used, and, with the possible exception of occasional cases of polycythemia vera, it has proved to be of less value than anticipated. Patients with leukemia as a rule do not stay in remission as long as one would expect after x-ray therapy so that this drug has been discarded by most investigators. The best results were obtained in chronic myelogenous leukemia.

Of the other drugs in use at present, I shall discuss only aminopterin. It is an anti-folic acid compound which possibly explains its occasional successful use in the acute leukemias of childhood. Dr. Farber in Boston now has a series of 50 children whom he has treated. Of these, roughly one-quarter are well and have no evidence of leukemia except on bone marrow aspiration. Another quarter are well and can return to school, but leukemic cells can still be demonstrated in the peripheral blood. The rest, approximately half, have done what all of them used to do. They came into the hospital and died regardless of therapy.

In order to effect a remission in one of these patients with this drug one must literally carry him through the valley of the shadow of death. It is a most harrowing experience. The reason for this is that one must nurse them along for the two- to three-week period after their leukemic cells are eradicated until the normal cells can regenerate. The findings during this time are those of aplasia and hemorrhage which such patients may have anyway. It takes up to three weeks or more to affect the hematopoietic system so that during that time one is faced in some instances with the problem of multiple transfusions and controlling hemorrhage. This last can be done in some instances by protamine or toluidine blue; in other instances it cannot be controlled. Thus it seems that therapy with aminopterin resolves itself into the problem of carrying a patient through an aplastic phase until the bone marrow can

regenerate sufficiently to meet the patient's needs.

To date we have treated 19 patients with fulminating leukemia, 10 of which have been in children. Children respond best. The drug produces marked toxic effects in adults and the results have been poor. Five of the children have responded favorably. Four have gone home and one is in the hospital with a normal blood count. We have two bizarre cases of monocytic leukemia in children, possibly related to Letterer-Siwe's disease or reticulo-endotheliosis. These two patients have not responded to aminopterin. The knowledge that a little something can be done in acute leukemia is a great stimulus for continued investigation.

Student: Did the second patient have as good a response to the nitrogen mustard therapy as the first?

Dr. Tice: It is really too early to tell.

Dr. Stowell: The diagnosis on the second patient has not as yet been established?

Dr. Tice: It seems to me that this is an example of the type of case in which a therapeutic dose of x-ray is easier on the patient than a biopsy.

Dr. Stowell: Would anyone care to comment on the possibility of a needle biopsy?

Dr. Wahl: Needle biopsy of a mediastinal mass? Needle biopsies of liver are bad enough, but from the mediastinum, no!

Dr. Tice: It has been my impression that surgeons have done very little toward the improvement of aspiration techniques in the lung or thorax generally.

Dr. Miles: I know of several instances in which needles have been inserted in mediastinal masses with impunity. In institutions, even where there is an active thoracic surgical service, however, most surgeons have been quite willing that a trial of radiotherapy be administered to patients from whom one cannot obtain a definitive biopsy as in this second case. There are few mediastinal tumors which are as radiosensitive as the lymphomas.

In such a patient as this who almost certainly has a lymphoma and who is expectorating blood, at autopsy one usually sees infiltration beneath the bronchial mucosa with tumor. That might well be the explanation of hemoptysis in this patient.

Student: What is the average life expectancy of a patient with Hodgkin's disease?

Dr. Tice: Approximately three years. In Hodgkin's disease, life is not as a rule prolonged by therapy except in such cases as the second where the mediastinal masses may cause generalized disturbances in circulation. Life expectancy in this disease does not follow any hard and fast rule, however. I can recall few cases who have survived more than 10 years.

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ACTIVITIES OF MEMBERS

Dr. Frederic W. Hall, who has been with the Snyder-Jones clinic in Winfield since 1939, has moved to Ponca City, Oklahoma, and is engaged in private practice there.

* * *

Dr. Fred Mayes, director of the health department in Wichita, has been named to the American Public Health Association's committee on local health departments.

* * *

Dr. and Mrs. L. B. Spake, Kansas City, recently donated \$1,000 to the University of Kansas Medical Center to establish a fund to support pre-school training for children with defective hearing.

* * *

Dr. H. W. Lane, health director of Butler County, spoke on "Control of Respiratory Diseases by Use of Glycol Vapor" at a meeting of graduate nurses in El Dorado last month.

* * *

Dr. J. G. Hughbanks, Independence, announces that Dr. J. D. DeMott is now associated with him in practice. Dr. DeMott was released from the Army medical corps in 1945 and since that time has taken postgraduate work in surgery in New York and has engaged in private practice in Baytown, Texas.

* * *

Dr. Orville R. Clark, Topeka, presented a paper, "Repeated Massive Intestinal Hemorrhages from Multiple Malignant Tumors of the Jejunum," at a meeting of the Western Surgical Association in St. Louis in December.

* * *

Dr. Floyd C. Beelman, secretary of the Kansas State Board of Health, has prepared one of 13 electrical transcriptions recently released for distribution by the Bureau of Health Education of the American Medical Association. Dr. Beelman's subject is "Accidents—A Leading Cause of Death."

* * *

Dr. Mary C. Colglazier, of the University of Kansas Medical Center, was guest speaker at a meeting of the A.A.U.W. in Leavenworth January 17. Her subject was "Women in Medicine."

* * *

Dr. W. T. Rich, Neodesha, discussed the disadvantages of socialized medicine before the Rotary Club of Neodesha at a meeting held January 11.

* * *

Dr. M. E. Pusitz, Topeka, presented a paper, "The Value of Surgery in the Routine of Treatment of Cerebral Palsy," at a conference on cerebral palsy in New York February 7.

The Hertzler Clinic, Halstead, announces that Dr. John H. Scott, formerly of Fulton, Missouri, is now a member of its staff.

* * *

Dr. D. E. Bux, Columbus, was recently named coroner of Cherokee County by Governor Frank Carlson.

* * *

Dr. H. Preston Palmer, who has been practicing in Scott City since 1931, was the subject of a feature story in the Scott City News Chronicle early in January. On December 31, 1948, he had delivered the 1000th baby of his medical practice.

* * *

Dr. C. C. Underwood, Emporia, has been named to serve on the Emporia Board of Education to succeed the late Dr. W. B. Granger.

* * *

The Nelson Clinic, Manhattan, announces that Dr. Hilbert P. Jubelt has joined its staff and will specialize in pediatrics. A graduate of the University of Illinois School of Medicine, Dr. Jubelt served two years in the Army medical corps and has completed two one-year residencies in pediatrics, one at Cook County Hospital, Chicago, and the other at Buffalo Children's Hospital, Buffalo.

* * *

Dr. M. A. Brawley, Frankfort, has been named Marshall County health officer, succeeding Dr. W. L. Wilmoth, Blue Rapids.

* * *

Dr. William Brownell, formerly of Wichita, is now associated with the Meek-Stensaas-Hill Clinic at Arkansas City. He will specialize in eye, ear, nose and throat work.

* * *

Dr. G. L. Millington, who has been practicing in Girard for 27 years, has announced his retirement.

* * *

Dr. V. M. Winkle, director of the division of local health administration of the Kansas State Board of Health, resigned from that position last month to become director of the Kansas City-Wyandotte County Health Department.

Tax Guide for Physicians

A 93-page compilation of essential information on the proper completion of federal income tax estimates and returns has been prepared by Schering Corporation of Bloomfield, New Jersey, and is being distributed to the medical profession upon request. Especially prepared for physicians by tax experts, the guide includes charts of sample tax returns, lists of permissible deductions, and detailed data on tax procedures.



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COUNTY SOCIETIES

The Franklin County Medical Society has announced the election of the following officers for 1949: president, Dr. M. E. Hyde; vice president, Dr. William S. Markham; secretary-treasurer, Dr. L. N. Speer; delegate to state society meetings, Dr. F. A. Trump; alternate, Dr. C. W. Henning.

* * *

Dr. Danely P. Slaughter, Chicago, was guest speaker at a meeting of the Shawnee County Society held January 3. His subject was "Diagnosis and Treatment of Accessible Cancer."

* * *

The Barton County Society was host to the physicians of the surrounding counties at a meeting held January 5 at the Gateway Country Club, Great Bend. Dr. Franklin D. Murphy, dean of the University of Kansas Medical School, outlined the "Kansas Plan" for the expansion of facilities and services of the medical center.

* * *

The Marion County Society met January 5 at Marion and elected the following officers for 1949: president, Dr. Charles R. Magee, Marion; vice president, Dr. E. S. Rich, Goessel; secretary-treasurer, Dr. R. R. Melton, Marion.

* * *

A meeting of the Southeast Kansas Medical Society was held at the Hotel Besse, Pittsburg, January 14. Dr. T. J. Dry of the Mayo Clinic, editor of the journal "Modern Concepts of Cardiovascular Disease," was guest speaker and discussed congestive heart disease.

* * *

The Cherokee County Society met at Columbus January 18. A business session was held and two members of the group, Dr. E. E. Henderson, age 81, and Dr. Clem Jones, age 84, were elected to honorary membership.

* * *

The annual dinner dance of the Wyandotte County Society was held at the Hotel President, Kansas City, Missouri, January 15, with Dr. Harold V. Holter as toastmaster. Dr. A. J. Rettenmaier, retiring president, spoke on "Whither Have We Been," and Dr. William H. Algie, new president, responded with "Whither Goest Thou." The new president of the American Cancer Society, Dr. C. C. Nesselrode, was introduced by Dr. O. W. Davidson.

Mississippi Valley Essay Contest

The ninth annual essay contest sponsored by the Mississippi Valley Medical Society will be held in 1949, with a cash prize of \$100, a gold medal, and a certificate of award being presented the author

of the best unpublished essay on any subject of general interest. The contest is open to all members of the American Medical Association residing in the United States. Contributions must be typewritten in English, not exceeding 5,000 words, and must be submitted in five copies not later than May 1, 1949, to Harold Swanberg, M.D., Secretary, Mississippi Valley Medical Society, 209 W.C.U. Building, Quincy, Illinois.

DEATH NOTICES

HARRY CLINTON BROWN, M.D.

Dr. H. C. Brown, 74, who had practiced in Rooks County for 43 years and in Stockton about 35 years, died December 19 after about six months illness. He was an active member of the Central Kansas Medical Society. Dr. Brown was graduated from Central Medical College, St. Joseph, Missouri, in 1905 and had practiced in Kansas since that time, maintaining an office in Webster before locating at Stockton.

* * *

XENO F. ALEXANDER, M.D.

Dr. X. F. Alexander, 67, an active member of the Ford County Society, died January 7. He had been practicing in Dodge City since 1907, specializing in anesthesiology. He received his medical education at Ensworth Medical College, St. Joseph, Missouri, and began practice in Cimarron.

* * *

JOHN SHERILL BETZ, M.D.

Dr. J. S. Betz, 39, an ophthalmologist in Kansas City, died January 18 after suffering a heart attack. He was graduated from the University of Michigan School of Medicine in 1937 and began practice in Kansas City in 1939, first being associated with Dr. John A. Billingsley and later opening an office for private practice. He was an active member of the Wyandotte County Medical Society.

* * *

CLEO D. BELL, M.D.

Dr. Cleo D. Bell, 45, an active member of the Crawford County Society, died January 16 at his home at Pittsburg. He received his medical education at the University of Kansas School of Medicine, graduating in 1931, and had practiced in Pittsburg since that time except for two years during World War II when he served in the Army air force medical corps in the Aleutian Islands. He was a member of the American Society of Anesthesiologists and served on the executive committee of the Kansas Society of Anesthesiologists.

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*Snyder, M. L., Kiehn, C. L. and Christopherson, J. W.: Mil. Surgeon, 97: 380, 1945. • Shipley, E. R. and Dodd, M. C.: Surg., Gynec. & Obst., 84: 366, 1947 • Mays, J. L.: J. Med. Assoc. Georgia, 36: 263, 1947. • Curtis, L.: Surg. Clin. N. America, 1466 (Dec.) 1947.

ABSTRACTS FROM CURRENT LITERATURE

Immunization in Infancy

Antibody Formation in Early Infancy against Diphtheria and Tetanus Toxoids. By Jean V. Cooke, et al. *Jnl. Ped.*, 33:141, August 1948.

This paper reports a small but well controlled study on the response of young infants to diphtheria and tetanus toxoids. The subject is of considerable practical importance in its relation to the use of the so-called triple vaccines.

Tetanus toxoid was found to produce as good a response in early infancy (1st to 3rd month) as it did later (6th to 14th month), producing an excellent immunity in more than 95 per cent of the 188 infants injected, and a very good immunity in all except two of the remainder.

Diphtheria toxoid was found to produce a much less satisfactory response in early infancy. In the 1-3 months age group, only 66.6 per cent of 75 infants developed an antitoxin titer of 0.1 unit per cc. or more. In the 3-6 months group of 56 infants, 89 per cent developed more than 0.1 unit, and in the 6-14 months group, 95 per cent of 60 infants. The poor response in early life was related to the presence of antitoxin acquired passively from the mother before birth. About 20 per cent of their series of 191 infants showed more than 0.1 unit of circulating antitoxin before any toxoid had been given at all, and this particular group made an especially poor response to active immunization.

The author, after discussing the desirability of early immunization against pertussis in infancy, concludes that the "timing" is bad for the routine use of combined diphtheria-tetanus-pertussis antigens. The schedule in use at the Washington University Children's Clinic in St. Louis is mentioned: pertussis vaccine at the 6th, 9th, and 12th weeks, and combined diphtheria-tetanus toxoids at the 7th and 9th months.—G.M.M.

* * *

Tourniquet Amputation

Tourniquet Amputation. By Stanley R. Maxeiner, *Jnl. Inter. Col. Surg.*, 11:2, 171-177, March-April 1948.

Amputation where the surgical risk is forbidding is accomplished by the author by means of five feet of one-half-inch gum rubber tubing wrapped tightly about the limb and left on for days. He maintains that this will complete a guillotine operation without shock and will permit elective surgery at an optimum time.

Indications are: "(a) Severe trauma with irreparable damage to an extremity of a patient who is suffering severe shock from loss of blood or the magnitude of his injuries; (b) in the presence of

virulent infections, especially gas gangrene, and (c) in the presence of gangrene due to diseased peripheral circulation with superimposed infection, or concomitant diabetes or concomitant critical heart disease."

The extremity distal to the tourniquet is wrapped in abundant cotton, enclosed in a rubber sheet and the cotton kept soaked with a 10 per cent formaldehyde. The ends of the tourniquet must be secured beyond any possible slipping.

A number of cases are cited, a notable one being that of a 65-year-old male struck by a locomotive engine and sustaining a crushing and mutilating injury of the right foot along with injury to the left ankle, and fracture of the pubis, left femur and lumbar vertebrae and ribs. The injury to the right foot was deemed irreparable. A rubber tube tourniquet was applied at the juncture of the middle and lower thirds of the lower leg and the distal portion wrapped in a formalin dressing in a rubber sheet. Amputation was deferred until the eighth day when the bone was cut through without anesthetic. Plastic operation was done on the stump some time later.—T.P.B.

* * *

Rheumatic Infection in Children

Active Rheumatic Infection in Children. By A. E. Hansen. *Meeting of Acad. Ped.*, Dallas, Texas, Dec. 1947.

The author lists the manifestations of active rheumatic fever:

1. Pain—a distinct polyarthritis in one-fourth of the cases early in the disease;
2. abdominal pain in one-eighth of cases;
3. rheumatic encephalitis and chorea in some cases;
4. rheumatic nodules in one-sixth of all cases;
5. carditis in 80 per cent of cases, sometimes severe and the only manifestation;
6. nephritis in one to five per cent initially and subsequently;
7. skin eruption in one-sixth of the cases.

Diseases to be considered in differential diagnosis: Increased temperature from emotional reactions, acute appendicitis, poliomyelitis, osteomyelitis, nephritis, leukemia, Hodgkin's disease, rheumatoid arthritis, purpura, low grade infections, sickle cell anemia, meningococcemia, hyperthyroidism, severe emotional problems, bacterial endocarditis, sepsis, pneumonia, scurvy.

Prognosis: One-third of the cases die, one-third have heart disease of varying degrees and one-third make a complete recovery.—D.R.D.

* * *

Child Accident Reduction

Child Accident Reduction: A Challenge to the Pediatrician. By George M. Wheatley, 2:3, 367-368, Sept. 1948.

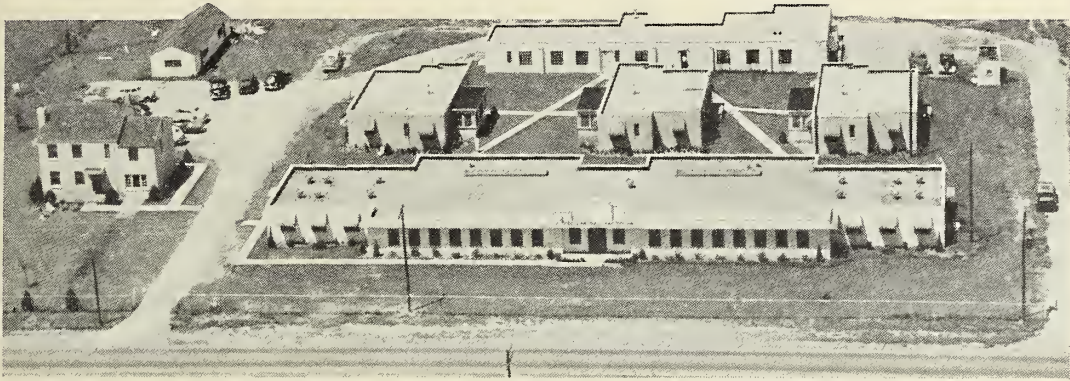
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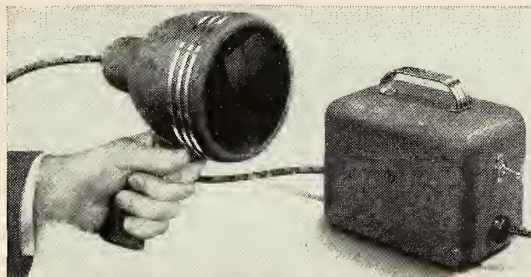
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called common childhood diseases. However the present leading cause of childhood mortality is accidents. From the ages of one to 14 years inclusive, accidents take as many lives as pneumonia, diarrhea and enteritis, measles, diphtheria, meningitis, poliomyelitis, whooping cough, and scarlet fever combined.

Physicians should adopt a more critical attitude toward the cause of accidents.

We are only beginning to study accidents in children from the standpoint of some children being more susceptible to accidents than others, where accident proneness of emotional or physical origin is by no means negligible. An attempt should be made to determine the cause of repeated accidents in these accident prone children.

The physician should intensify his safety education of the parents when their child is between one and five years. This is the period when the parents begin to drop many of their unwarranted apprehensions. Two factors characteristic of child development are frequently at the root of accidents—the desire of children to imitate others, especially their parents, and their fondness for repetition. If the parent is heedless in his actions, the child may follow suit. If the child does a hazardous thing and avoids disaster, he is likely to repeat the procedure.

Physicians should become aware of accident prone children in their practice and attempt to help parents in the understanding and proper handling of such children.—D.R.D.

* * *

Childhood Diseases Conquered

Childhood Diseases Conquered. Stat. Bull. Metro. Life Ins. Co., 27:6, 6-8, Oct. 1946.

Among Metropolitan industrial policy holders of ages one to 14 the age-adjusted death rate from measles, scarlet fever, whooping cough, and diphtheria fell from 144.6 per 100,000 in 1911-1915, to one-twentieth of this (7.2) in 1941-1945, a drop of 95 per cent in little more than a generation. The largest decline, 96 per cent, was recorded for diphtheria and scarlet fever; the decline for measles was 93 per cent and for whooping cough, 91 per cent.

Credit is given to many influences, among them more and better medical care, nutritional progress, health education, improved housing, smaller families and rise in our standard of living. In addition to these general developments, a number of specific factors have been operating. For diphtheria, for example, there is now available antitoxin treatment, the Schick test, and active immunization.

For scarlet fever, a major factor in the downward trend of mortality has apparently been a decreased virulence of the causative organism. The case fa-

tality rate has fallen from about 15 per cent to less than one per cent. Convalescent serum and antitoxin are proving valuable adjuncts in treatment. Specific measures for the control of whooping cough and measles have been popular only in recent years, and can account for but little of the overall improvement in the mortality from these diseases. Chemotherapy has been a great step forward in combating the complications, mainly pneumonia, which constitute the chief hazard in most of these diseases.

In spite of the great progress made, infectious diseases still claim the lives of about 5,000 children a year in our general population. "The majority of these lives can be saved through immunization for those diseases where such means are available and by early and adequate medical and nursing care in cases of illness."—D.R.D.

* * *

Endometriosis

Endometriosis as Cause of Small Bowel Obstruction. By Edwin L. Zander, Vincent D'Ingianni and Everett L. Drews, Jnl. Inter. Coll. Surg., 11:2, 149-153, March-April 1948.

"Whenever we find a patient with partial or complete intestinal obstruction, who has a history of sterility, dysmenorrhea, dyspareunia and previous pelvic diseases, where endometriosis was found, it is indicated that the obstruction is due to endometriosis of the small intestine."—T.P.B.

Academy of Proctology Organized

A new organization, the International Academy of Proctology, has been established by charter in New York state with membership open to physicians engaged in the practice of medicine whose interest lies in the field of proctology, but who are not necessarily limited to this specialty. Applicants must be members of their state and county medical societies in the United States or equivalent organizations in foreign countries.

Honorary fellowships will be bestowed upon physicians whose achievements in the specialty particularly merit honor, whose names are approved by the International Committee on Membership, and whose election has carried by a majority vote at an annual meeting of the academy. Fellowship will be granted physicians whose achievements in proctology warrant this recognition, or who are diplomates of the American Board of Surgery or Board of Proctology. Associate fellowships will include physicians engaged in an allied specialty, whose interest in proctology is keen and progressive.

Complete information on the new academy may be secured from Alfred J. Cantor, M.D., 43 Kissena Boulevard, Flushing, New York.

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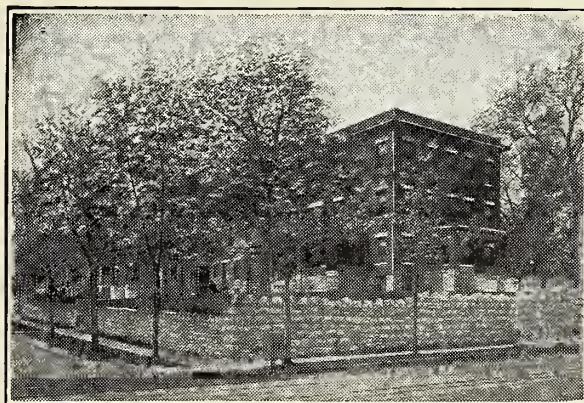
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THE KANSAS PRESS LOOKS AT MEDICINE

For this section of the Journal the Editorial Board selects representative opinions from the press. These are presented to give the medical profession a review of current editorial expression and include opinions that are both favorable and unfavorable to medicine. The Editorial Board would appreciate hearing from the membership regarding selection of material for this column.

It's always nice to meet a new man... It's doubly nice to meet a splendid and decent man like Dr. Peck, who, by the way, will be the new president of the Kansas Medical Society... This is a tribute to Dr. Peck and a lovely honor for western Kansas. This department has had a few squabbles with medical doctors. We'll probably have a few more in the future. But, if and when a squabble does arise we'll admit that the large majority of medical doctors are splendid, ethical men... It's the few "quacks" we'll gun for and we'd like to encourage the medical profession itself to clean its own house!...

Anyone who knows Dr. Tice and some of the rest of those able medic teachers who run the University hospital will all agree they not only run a good hospital for the tax-payers but they also turn out a bunch of medic graduates that Kansas should be (and is) proud of... This is the reason you—every one of you voters—should see your newly elected state officials before they go down to Topeka in January and tell 'em—the officials, that is—they should support the bill which will grant more money for a larger medical school. It's only good business being operated on a good business basis in a very humane manner by respected gentlemen like Doc Tice...—*Garden City Telegram.*

* * *

Frame of Mind

The shortage of doctors in the rural areas and small towns of Kansas and other states has been receiving a fair amount of publicity lately and stories of how small towns have secured the services of medical men have made worthwhile reading and the methods used worth every consideration.

To the writer, the striking thing about our present day medical predicament is the apparent complete reversal of the old medical school bible philosophy which hammered into the brain of the medical student that he was a servant of mankind and that the treatment and cure of his fellow men's ills should come before self. Today's medical students are graduating with a far different philosophy.

In effect, the modern medical graduate says: "Let the trumpets sound. After studying very hard I am

now a doctor. My profession is one of great dignity and my skills are in great demand. I am interested in settling down where my great talent can be utilized to the greatest extent. What will you offer me?"

Likely we'll be challenged on this article but to us that trend of thinking among young doctors today is the reason why people in rural areas are being sentenced to unnecessary suffering due to lack of prompt medical attention. Today, the doctor does not come to the sick, the sick must come to the doctor.

We discussed this situation some days ago with the father of a young medical student who declared "that these young doctors won't come to a dinky town where there's no hospital nor anything to work with." In other words, the modern doctor does not consider it an accomplishment to save a man's life unless it can be done in the comfort and convenience of a blazing white hospital room.

We are well aware that the mortality rate has fallen since the days of the storied country doctor who roamed the countryside in all kinds of weather with his little black bag. And we do not discount the necessity for modern hospitals for serious disorders. But the crowded conditions of today's hospitals can be laid directly to the door of this problem. Minor cases from rural areas are now hospitalized for convenience of both doctor and patient whereas if a hometown doctor were available, minor cases could be handled locally and there would be plenty of room for serious and emergency cases in the hospitals.

The present day competition for doctors among communities has contributed to the attitude of the profession. Graduates are frequently subsidized by communities in order to retain their services. Free homes, free rent, free cars, free office space—anything to get a doctor. A doctor who gets started from scratch these days is indeed an oddity.

The solution? More doctors is the only answer. State money can be appropriated to assist young men who desire a medical career but who cannot afford it. It must be made easier for men to become doctors. Like motor cars, the medics will be hard to get as long as they are scarce. Perhaps making fewer "Doctor Kildare" movies would help.

And we guess further that if the truth were known, the medical profession could throw its weight successfully in this direction. But, as they bask in their glory (like the girl behind the counter in the army camp PX) they are quite content to leave things as they are, taking a decarbonizing breath now and then to sigh: "We have tried to be good but have succeeded only in becoming great." *Luray Herald, December 1, 1948.*



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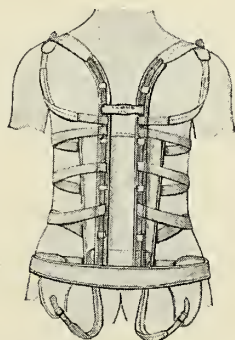
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BOOK REVIEWS

Modern Clinical Psychiatry (Third Edition). By Arthur P. Noyes, M.D. Published by W. B. Saunders Company, Philadelphia. 525 pages. Price, \$6.00.

Revised and brought up to date with the addition of excellent chapters on shock and other physical therapies, psychotherapy, and child psychiatry, Noyes's book continues to be one of the best psychiatric textbooks. Physicians in general practice, medical students, and beginners in psychiatry will find much to interest them in this lucid presentation of clinical syndromes, together with a simple exposition of the various dynamic approaches to the understanding of human behavior and the treatment of psychiatric illness. Accompanying each chapter is a list of well-selected references to pertinent classical and recent psychiatric books and articles to which the interested reader can turn with profit.—M.L.

* * *

Pathology. By W. A. D. Anderson, M.D. Published by the C. V. Mosby Company, St. Louis. 1453 pages, 1193 illustrations. Price \$15.

The subject is arranged in traditional manner, i.e., inflammations, degenerations, metabolic disturbances, diseases by various agents, and neoplasms, followed by special pathology. The neoplasms are discussed in detail under appropriate organ systems. Many of the topics are discussed more fully and are more abundantly illustrated than in most texts. The various styles of the 32 collaborators add to the readability of the book.

Students unacquainted with the subject may find the book difficult; however, this is a common criticism of most pathology texts. For the practicing physician and the student in the clinical years it will be found to be an excellent reference and a valuable aid in understanding the mechanism of diseases.—J.B.

* * *

Physician's Handbook. Fifth Edition. By John Warkentin, M.D., and Jack D. Lange, M.D. Published by University Medical Publishers, Palo Alto, California. 293 pages. Price, \$2.00.

The Physician's Handbook, now in its fifth edition, continues to be a comprehensive compilation of procedures and data useful to the physician and made available in a concise form. It contains a relatively complete laboratory manual, giving, in addition to the technique, the principles behind and the interpretation of each test. Very useful are the charts giving the normal values for many of the tests, as well as charts of many of the changes found in the urine or blood in a variety of diseases. In connection with many of the function tests, such as those for

the liver, there is given a summary of the various functions of the organ.

In addition to the laboratory manual, there are sections on bacteriology, parasitology, and epidemiology; history taking and examinations; drugs and hormones; diets; and care of surgical patients. Of great value are the outlines on the diagnosis and treatment of acute poisoning and examination of the comatose patient. Conversion tables are included, together with tables of weights, measures, and equivalents. The index is adequate, although many of the lesser items are omitted for the sake of brevity.

On the whole, this handbook lives up to its stated purpose of summarizing "tersely, clearly, and comprehensively diagnostic procedures and factual data which a physician must have quickly available."—W.L.D.

* * *

Practical Clinical Psychiatry. Sixth Edition. By Edward A. Strecker, M.D., Franklin G. Ebaugh, M.D., and Jack R. Ewalt, M.D. Published by the Blakiston Company, Philadelphia. 476 pages. Price, \$5.00.

The material was rearranged in the new edition of this text book. Special chapters on traumatic reactions, psychosomatic medicine and pathologic drinking were added. The textbook follows Dr. Adolf Meyer's psychobiological point of view in psychiatry. Dr. Edward Strecker, in his preface, states, "There will be an eclectic therapeutic viewpoint based on the necessity of accomplishing restitution in the shortest possible time without too close adherence to any particular school of technic."

The language is lucid and the reader will appreciate the numerous case examples presented in the text. Although the general practitioner seldom encounters the major psychoses, the description of which forms the bulk of the volume, he will find many chapters valuable in his everyday experience. The chapter on psychosomatic medicine is brief, but this subject can hardly be fully discussed in a general text on psychiatry. Dr. Leo Kanner's chapter on psychopathologic problems of childhood gives a concise summary of this important topic.

Anybody concerned with psychiatric problems will profit from this text book.—G.W.

* * *

Ciba Anatomical Charts. Compilation of Ciba illustrations of anatomy and pathology prepared by Frank H. Netter, M.D. To be published by Ciba Pharmaceutical Products, Inc., Summit, New Jersey. 224 pages, 191 full color illustrations. Price on request to Ciba Company.

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tributed up to January 1, 1948. The illustrations have been used by many medical schools as teaching aids and by physicians as assets to office instruction of patients.

The subjects to be covered and the number of illustrations for each are as follows: lungs and chest, 36; injuries to the chest, 12; esophagus, 12; stomach, 19; duodenum, 12; small intestine, 20; colon, 20; injuries of the abdomen, 10; testicle, 14; prostate, 5; male breast, 2; female breast, 18; heart and aorta, 11.

* * *

ANA Public Relations Workshop. Published by American Nurses' Association, New York City. 32 pages, 39 illustrations. Price \$2.50.

This book is the same as the dialogue of the film which is presented in the American Nurses' Association Public Relations Workshop. Mr. E. L. Bernays, public relations consultant for the American Nurses' Association, presents the fundamentals of public relations in an understandable and practical form. Seven means of expanding the program are given: the press, radio, movies, direct mail, spoken word, planned events, and knowing the community.

As a reference for general information the book is very good, as general instructions and methods are given. However, for specific work in the field of public relations the reader may find that it contains much extraneous material. It repeats much material that has been presented in the *American Journal of Nursing* during the past two years.—O. Mc.

* * *

Occupational Therapy Source Book. Edited by Sidney Licht, M.D. Published by Williams and Wilkins, Baltimore. 90 pages. Price \$1.00.

This small volume represents a compilation of

several articles which appeared in *Occupational Therapy & Rehabilitation* during 1947 and 1948. It covers selected bits of the history of occupational therapy up to 1914. Lest the reader of this review confuse the term occupational therapy with meaningless "busy work" at looms or with reeds and canes, it would be well to remember that until the advent of fever therapy, shock therapy and other appurtenances of modern day psychiatric care, the management of the mental patient was essentially that of intelligently supplied activity therapy, and largely through the results of such therapy have evolved current concepts of treatment.

Dr. Licht has chosen the authors well. He has arranged the treatises to show how the concept of

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Control of Pain in Childbirth. Third edition. By Clifford B. Lull, M.D., F.A.C.S., and Robert A. Hingson, M.D. Published by J. B. Lippincott Company, Philadelphia. 522 pages. Price \$12.

This is an up to date review of the present status of all the various agents and drugs with the methods used in obstetrical analgesia and anesthesia that should be of definite value to all obstetricians and others interested in the problem, as well as serving as a useful reference book.—R.L.N.

* * *

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SUBJECTS TO BE DISCUSSED

THE PHYSIOLOGICAL EFFECTS OF ANESTHETICS UPON THE RESPIRATORY SYSTEM.
THE EFFECTS OF ANESTHETICS UPON THE AUTONOMIC NERVOUS SYSTEM.
THE EFFECTS ON ANESTHETIC AGENTS UPON THE CENTRAL NERVOUS SYSTEM.
RECENT WORK ON THE CONTROL OF PAIN WITH DRUGS.
THE PHYSIOLOGICAL EFFECTS OF ANESTHETICS UPON THE CIRCULATORY SYSTEM.
THE DIAGNOSIS & TREATMENT OF RESPIRATORY COMPLICATIONS DURING AND AFTER ANESTHESIA.
MANAGEMENT OF TRAUMATIC SHOCK.
THE DIAGNOSIS & TREATMENT OF CIRCULATORY COMPLICATIONS.
SPINAL ANESTHESIA.
THE PROBLEMS OF BLOOD TRANSFUSION AS THEY CONCERN THE ANESTHESIOLOGIST.
SADDLE AND CAUDAL BLOCK ANESTHESIA.
THE OBSTETRICIAN'S VIEWPOINT OF OBSTETRICAL ANESTHESIA.
THE USE AND ABUSE OF PREOPERATIVE MEDICATION.
THE CARDIAC OBSTETRICAL PATIENT AS AN ANESTHETIC RISK.
ANESTHESIA FOR CAESARIAN SECTION—PENTOTHAL SODIUM RECTAL, NITROUS OXIDE-OXYGEN, CYCLOPROPANE, ETHER, SPINAL, LOCAL REGIONAL.
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The crude death rate in the United States for the first nine months of 1948 was estimated to be 10 deaths per 1,000 estimated population, according to figures released recently by the National Office of Vital Statistics, Public Health Service. Later releases will show figures by states. For 1946 the Kansas death rate was 9.6 per 1,000 population and for 1947 it was 9.7.

THE JOURNAL of the KANSAS MEDICAL SOCIETY

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MARCH, 1949

Number 3

A Letter from Dean Franklin D. Murphy

For the Third Annual University of Kansas School of Medicine
Issue of the Journal

To the Members of the Kansas Medical Society:

I wish to take this opportunity to thank the entire membership of the Society for your indispensable efforts, individual and collective, in bringing to a successful conclusion the campaign to enlarge the Kansas Medical School.

I am sure that the activities prior to the successful legislative action have been, and will continue to be, productive of a good many mutual benefits. The increasingly close cooperation between the Society and the School of Medicine bodes well for rapid and healthy developments in Kansas medicine. Through the medium of this program, the people will become progressively more aware of the fact that physicians of our state have a positive approach to the problems of health. I sincerely believe that with all agencies and individuals concerned with health working together, it can be clearly demonstrated that many health problems in Kansas can be resolved by a cooperative effort on the part of Kansans alone.

Particularly am I grateful that the work of the past three or four months has made it possible for me to meet and learn to know so many of you personally, and I sincerely look forward to the opportunity of visiting with you at the Medical Center in the months and years to come.

The successful conclusion of this recent campaign really only signals the beginning of a long-range effort, the success of which will depend upon coordination, cooperation, and mutual advice and counsel among many groups but, most important of all, between the members of the Kansas Medical Society and the School of Medicine. Our recent joint project is clear proof that not only can we successfully work together but that it is an altogether pleasant, satisfying and fruitful experience.

I look forward with great enthusiasm and optimism to the future of Kansas medicine.

Cordially yours,

Franklin D. Murphy, M.D.
Dean, Kansas Medical School

Uremia in Obstructive Uropathy

William L. Valk, M.D.*

Kansas City, Kansas

Uremia may be defined as the symptom complex which occurs in conjunction with azotemia resulting from disturbances in the functioning status of the kidneys. It is the purpose of this paper to consider the uremic manifestations found in association with obstructive nephropathy and the supportive and the corrective therapy of the associated renal insufficiency.

The Symptomatology of Uremia

The symptoms and signs of uremia may be divided into six main groups. They are as follows:

1. Gastrointestinal: nausea, vomiting, epigastric distress, diarrhea, and dehydration.
2. Central nervous system: apathy, mental depression, headache, drowsiness, coma, visual disturbances and convulsions.
3. Neuromuscular: increased neuromuscular irritability, muscular twitchings, hyperactive reflexes, and cardiac irregularities.
4. Circulatory: cardiac failure, pericarditis, and hypertension.
5. Hematopoietic: anemia.
6. Cutaneous: petechiae, urticaria, and eczematoid dermatitis.

A century ago, Bright postulated that toxic agents were responsible for the uremic syndrome and since his day, investigations have reaffirmed this opinion. Each of the following substances has been considered the essential agent in the production of the uremic complex—urea, creatinine, phenol, acid bodies, guanidine, inorganic phosphates and sulphates, as well as various unknown toxic substances. Renal insufficiency is indicated by an elevation of the blood nitrogen level, and the degree of nitrogen retention has often been considered an index of the extent of renal failure. It is understandable, therefore, that excessive blood nitrogen has been regarded as the toxic agent in uremia. However, we know that the blood nitrogen level does not always reflect the clinical status of the patient. One patient may appear well while possessing a blood NPN of 125 mgm. per cent, while another with a blood NPN of 90 mgm. per cent may be comatose and have uremic convulsions. Furthermore, elevations of the blood nitrogen level produced by the ingestion of exogenous urea are not accompanied by the symptoms of uremia or, in fact, any untoward symptoms. It is, therefore, obvious that excessive blood nitrogen does not directly contribute to the uremic syndrome.

The cause of the uremic symptoms must be a blood constituent whose concentration is invariably abnormal during the occurrence of the syndrome and, further, whose abnormal blood level roughly parallels the severity of the uremic state. Analyses of the blood constituents in patients having nitrogen retention both with and without the uremic syndrome disclose that abnormalities in the acid base balance are the only dislocations which are invariably present in the uremic state, and that severe degrees of acidosis associated with nitrogen retention are always accompanied by severe uremia.

Two hundred patients with nitrogen retention were observed on the Urology Service at University Hospital. Twenty-five (12½ per cent) of these patients displayed the symptoms of renal insufficiency and uremia. All of these patients were found to be in a state of acidosis when observed by CO₂ combining power determinations. The remainder of these patients in nitrogen retention (175 cases) did not exhibit symptoms of uremia nor were they found to be in acidosis. The uremic patients showed CO₂ combining powers varying from 10-35 volumes per cent and although the degree of acidosis accurately paralleled the severity of the uremic symptoms, there was no correlation between the CO₂ combining power level and the degree of nitrogen retention. The CO₂ combining power is a measure of the available base in the blood plasma and 60 volumes per cent is the normal value. We consider a CO₂ combining power of 30-40 volumes per cent indicative of mild acidosis, 20-30 volumes per cent of a mild acidosis, and 10-20 volumes per cent of severe acidosis. Death is imminent when the CO₂ combining power is at 10-15 volumes per cent and recovery has rarely been seen at levels below 10 volumes per cent.

The Mechanism of Production of Renal Dysfunction in Obstructive Nephritis

Without entering into the disputed problems of renal physiology, let us consider what occurs in urologic patients to cause renal dysfunction and abnormal blood chemistry. Urinary obstruction causes first of all an increased hydrostatic pressure above the point of impass. This is transmitted in a retrograde manner, eventually exerting an effect on the tubules and glomeruli. Since the capillary blood pressure in the glomerular tuft, which drives the glomerular filtrate through the endothelial membrane is equivalent to about 60 mm. of Hg., and the

*From the Department of Surgery, Section of Urology, University of Kansas Medical Center.

colloid osmotic pressure holding the fluid within the capillary equals about 30 mm. of Hg, the effective filtration pressure is 30 mm. of Hg. As the normal glomerular filtration rate is 125 cc./minute (clearance of inulin), it follows that 180 liters of glomerular filtrate are formed each 24 hours. The composition of the filtrate is identical with blood plasma except for the absence of proteins. These large protein molecules cannot pass through the glomerular filter so remain in the plasma and play an important part in the tubular reabsorption of 90 per cent of the water of the filtrate. Reabsorption of needed blood constituents also occurs in the proximal tubules as needed to maintain normal blood levels. Although there is some reabsorption of the true urine waste products, namely, urea, creatinine, uric acid, phosphates and sulphates, there is always greater excretion than retention in health. In obstructive uropathy, there occurs an increase in intratubular pressure and a decrease in the effective filtration pressure with resulting decrease in formation of glomerular filtrate and retention of nitrogen, phosphates, and sulphates in the blood.

As has been previously stated, the elevation of the NPN of the blood is of little importance to the well-being of the patient. The increase in blood concentrations of the acid bodies, HPO_4 and SO_4 , is another matter, since with retention of these acid ions acidosis results unless compensatory changes occur, for the body will not tolerate any appreciable change in pH of the blood. Normally the kidney is able to excrete more acid than base by two principal mechanisms, a conservation of the latter (base) being necessary since it is not obtainable within the body except from external sources and is of utmost importance in acid base balance. First, by converting Na_2HPO_4 to NaH_2PO_4 , a molecule of Na is saved and reabsorbed back into the blood stream. Secondly, by the formation of NH_3 from amino acids with substitution of this radicle for the Na and excretion of the SO_4 , HPO_4 , and Cl ions with the NH_3 , a molecule of Na is again saved. Under normal circumstances, the acid-base balance of the blood is held within compatible limits through the intervention of two organ systems, the kidneys and lungs. The pH of the blood, in turn, is a function of the ratio $\frac{\text{H}_2\text{CO}_3}{\text{NaHCO}_3}$. In obstructive nephropathy with retention of acid sulphate and phosphate, a reduction in the denominator of this ratio occurs with a resultant lowering of the pH of the blood and acidosis. A compensatory hyperpnoea occurs in an attempt to adjust H_2CO_3 . Since this mechanism is only about 50 per cent effective, acidosis persists and without adequate renal function or appropriate therapy, it cannot be corrected. As there has been mechanical injury to the tubular epithelium because of increased

hydrostatic pressure and resulting vascular changes, we may assume that the base-saving devices described above have been lost and that the HPO_4 and SO_4 are being excreted with free base that is normally conserved by the kidney. When Na is lost, there is always loss of intercellular water and dehydration occurs.

Another important dislocation in blood chemical balance is seen in acidosis. When there is an increase in the serum phosphorous, there is a dissipation of serum calcium since the Ca x P product is generally maintained at 40 mgm. per cent. With acidosis, there is always a decrease in cellular metabolism. Decrease in blood Ca is of greater importance than has been ascribed to it in the past since a normal serum Ca is necessary for the maintenance of the functional integrity of the voluntary and autonomic nervous systems. Low serum Ca is manifested by increased neuromuscular activity, muscular twitching, cardiac irregularities, and convulsions with tetany. Hypocalcemia plays an important role in the convulsions of uremia. To the above conditions may be added anemia and avitaminosis. Poor nutrition, muscular weakness, skin changes and slow healing may be attributed to these states.

Treatment of Uremia Resulting From Obstructive Disease

Adequate treatment of uremia consists of correction of the abnormal blood chemistry in addition to adequate urinary drainage. With adequate urinary drainage, mechanical injury to the tubular epithelium is decreased and normal function encouraged. While this process is taking place, attention must be directed towards correction of the existing acidosis. We believe the administration of Na lactate is an excellent therapeutic measure since it supplies a maximum of base, a minimum of acid, and large quantities of water. The conventional use of NaCl and Ringer's solution in nitrogen retention and uremia is to be strongly condemned, since NaCl supplies nearly equal amounts of acid and base, is not readily excreted even by the normal kidney, and thus overtaxes the already injured kidneys since the Cl must be excreted with either Na or NH_3 . Hypochloremia exists in those patients who have had severe vomiting or sweating and is not frequently seen in urological patients. Replacement of the alkaline reserve with Na lactate may be calculated by use of the Hartman-Senn formula— $60 - \text{CO}_2$ combining power of patient $\times .3$ body weight in kilograms = number of cc. of molar Na lactate necessary to bring the patient's CO_2 combining power to normal, or more simply in adults by giving 100 cc. of 1/6 molar (physiological) Na lactate for each volume per cent the CO_2 combining power is below 60. In case large amounts of Na lactate are needed,

the volume may be cut in half by using $\frac{1}{3}$ molar solution in place of the isotonic $\frac{1}{6}$ molar solution. Correction of the hypocalcemia is made by adding 10 cc. of 10 per cent calcium gluconate to the lactate solution each day. The dehydration is corrected with five per cent glucose as indicated by the cardiovascular condition of the patient. The anemia is corrected with whole blood and the avitaminosis with vitamins B and C parenterally. Definite vitamin B deficiencies indicated by skin and mucous membrane changes were present in most of the acidotic patients and a scurvy level of ascorbic acid was present in some. When renal damage has been severe, daily correction of the blood deficiencies is necessary and of course, if the damage is permanent, the treatment is only palliative, but it is a rare case of obstructive uremia that is on that basis. The following cases serve to illustrate our experience in treating uremic patients.

Illustrative Treatment of Uremic Patients

I. *F. K. 493256*: This patient entered University Hospital with a long history of progressive prostatism leading up to acute retention two days prior to admission. Physical examination revealed a semi-comatose, elderly male, nauseated and vomiting with deep respiratory movements and showing severe muscular irritability with positive Shvostek and Trousseau signs. The bladder was greatly distended and the patient severely dehydrated. The prostate was two plus carcinomatous.

Blood chemistry on admission:

NPN	217 mgm. per cent
CO ₂ combining power	15 volume per cent
Serum Ca	6.8 mgm. per cent
Hb	55 per cent

Treatment over a period of 48 hours:

- 4500 cc. $\frac{1}{6}$ molar Na lactate intravenously.
- 2000 cc. 5 per cent glucose intravenously.
- 500 cc. blood intravenously.
- 20 cc. 10 per cent calcium gluconate intravenously.

Catheter drainage.

Blood chemistry after treatment:

NPN	155 mgm. per cent
CO ₂ combining power	55 volume per cent
Serum Ca	8.3 mgm. per cent
Hb	62 per cent

During treatment he became rational, his appetite improved and nausea and vomiting disappeared, excessive neuromuscular irritability diminished. A transurethral resection and a bilateral orchiectomy were performed 14 days later with discharge of ambulatory patient on the 28th hospital day.

II. *E. C. 500576*: This patient was a 36-year-old female with carcinoma of the cervix clinical Grade

IV-B. She entered University Hospital in a comatose state. She was severely dehydrated, had deep respiratory movements and was convulsing intermittently.

Blood chemistry on admission:

NPN	164 mgm. per cent
CO ₂ combining power	14 volume per cent
Serum calcium	7.3 mgm. per cent

Treatment over a period of 48 hours:

- 4500 cc. $\frac{1}{6}$ molar Na lactate intravenously.
- 2000 cc. 5 per cent glucose intravenously.
- 500 cc. blood intravenously.
- 20 cc. 10 per cent calcium gluconate intravenously.

Bilateral nephrostomy.

Blood chemistry after treatment:

NPN	100 mgm. per cent
CO ₂ combining power	59 volumes per cent
Serum Ca	8.6 mgm. per cent

Patient became rational and convulsions ceased six hours after she had received the Na lactate and calcium gluconate. Her appetite improved and she was discharged on her 28th hospital day. Death occurred six months later due to carcinomatosis.

III. *J. M. 501677*: This patient previously had a left nephrectomy for calculus pyonephrosis. Right pyelonephritis and renal insufficiency developed. The NPN gradually rose to 193 mgm. per cent, the CO₂ combining power dropped to 18 volumes per cent with the usual signs and symptoms of uremia. He was maintained, however, in a comfortable state by daily correction of the acidosis and hypocalcemia over a 21-day period. Forty-eight hours before death, patient's blood showed a NPN of 193 mgm. per cent, a CO₂ combining power of 35 volumes per cent, and a serum Ca of 10 mgm. per cent. He remained symptom free as long as daily correction of the acidosis and hypocalcemia was carried out. Finally, it was impractical to continue treatment and a convulsive death occurred within 48 hours. One hour before death, the NPN was 211 mgm. per cent and the CO₂ combining power, 10 volumes per cent.

IV. *G. K. 140060*: This 67-year-old male entered University Hospital with a five-year history of progressive prostatism associated with intermittent hematuria. Examination revealed a poorly nourished and chronically ill patient in early acidosis. The bladder was palpable to the level of the umbilicus. The prostate was Grade III benign.

Laboratory studies:

NPN	127 mgm. per cent
CO ₂ combining power	28 volume per cent
Hb	38 per cent

Upper tract studies were negative and it was obvious that the bleeding was from the prostate. Cys-

tometric examination showed a hypotonic myogenic bladder with a residual urine of 1200 cc.

Treatment over a period of 48 hours:

2000 cc. 1/6 molar Na lactate intravenously.

2000 cc. 5 per glucose intravenously.

1000 cc. blood intravenously.

Catheter drainage.

The patient's nausea and vomiting ceased and his appetite returned. A transurethral resection was then carried out with the removal of 130 gms. of benign tissue and a measured blood loss of 450 cc. This blood loss was replaced and 3000 cc. of five per cent glucose were given postoperatively. On the first postoperative day the NPN was 89 mgm. per cent and the CO₂ combining power 49 volumes per cent. There followed an uneventful convalescence and he was discharged home on the fourteenth postoperative day.

Summary

We believe that the uremic syndrome observed in patients with obstructive nephropathy may be explained adequately upon the objective pathological findings in the blood, namely, the inorganic acidosis, the hypocalcemia, the dehydration, the anemia, the

vitamin deficiency. Correction of these abnormalities has caused disappearance of the syndrome in uremic patients even in the presence of continued nitrogen retention as demonstrated by Case III.

Since the NPN of the blood represents only an index of filtration pressure and not necessarily a measure of renal damage, it becomes significant as an index of renal damage only when there is an associated acidosis and hypocalcemia. If the NPN is high and the CO₂ combining power is normal, the patient requires only adequate urinary drainage to release the increased intratubular hydrostatic pressure and to allow simple glomerular filtration at a normal rate and volume. It is not necessary to postpone operative procedures in such patients since there is no significant renal damage if the CO₂ combining power is normal. It has been our practice, therefore, to operate upon obstructed patients in nitrogen retention if the CO₂ combining power is normal, or if abnormal, as soon as the acidosis has been corrected.

A simple rule for correction of acidosis in adults is presented: give 100 cc. of 1/6 molar Na lactate intravenously for each volume per cent the patient's CO₂ combining power is below 60 volumes per cent.

90th Annual Session

KANSAS MEDICAL SOCIETY

Topeka, Kansas

May 9-12, 1949

Make Hotel Reservations Now

Khellin in Bronchial Asthma

Ralph H. Major, M.D.*

Kansas City, Kansas

During the past year we have studied the effectiveness of a new drug in the treatment of asthma. This is khellin or khellinin, the active principle extracted from the seeds of the umbelliferous plant, *Ammi visnaga*, known in Arabic as "Khella," which grows wild in the Mediterranean area and in Arabia. Extracts of its dried seeds have been used since ancient times by the people of these areas as an antispasmodic in renal colic and ureteral spasm.

Several crystalline substances have been isolated from the seeds, including visammix and khellin. Khellin, which is responsible for most of the activity of the plant, was first prepared in an impure form by Mustapha in 1879, purified and separated by Fanth and Salim in 1930. The final determination of the chemical formula of khellin and visammix was made by Malik for khellin and Hassan for visammix in 1932. Samaan, in the same year studied the pharmacological action of khellin and found that it relaxes all the visceral smooth muscles by direct action on the muscle fibers. Davies, in 1948 reported the synthesis of khellin.

In 1945, Anrep and his associates reported some careful physiologic experiments and found that it produced a great increase in the coronary blood flow. In one dog, for instance, the coronary blood flow, which was steady at 27 cc. per minute, increased after 10 mg. to 50 cc. per minute and after a second dose of 10 mg., to 100 cc. per minute. They then treated 38 patients suffering from angina pectoris, reporting 28 good responses, seven moderate, and three with no beneficial effects. The drug was administered both by mouth and intramuscularly.

In 1947, Anrep and his associates reported a series of asthmatic patients treated with khellin, which animal experiments had shown produced a dilatation of the respiratory passages. In 41 out of 45 patients, complete and prolonged relief followed a single intramuscular injection of 200-300 mg. Repeated daily administration of khellin by injection or by mouth conspicuously reduced the number and the severity of the attacks. The authors point out that the action of khellin in bronchial asthma is not so prompt as that of adrenaline or of ephedrine but it is more lasting, and, since it has no effect on the systemic blood pressure, it can be safely administered

*From the Department of Internal Medicine, University of Kansas School of Medicine.

TABLE I

Case No.	Age	Sex	Duration of Asthma	Hospital Admission	Complication	Eosinophiles in Per Cent
1.	45	M.	35 years	9/10/48—9/15/48	Cor pulmonale	9/10/48 4%
2.	52	F.	15 years	3/16/48—3/29/48		3/17/48 19%
						3/18/48 18%
						3/29/48 14%
3.	30	F.	10 years	2/23/48—3/18/48	Pyelitis Bronchiectasis	2/23/48 4%
						2/24/48 5%
4.	23	F.	10 years	8/31/48—9/19/48		8/31/48 3%
5.	43	F.	6 years	6/25/48—7/23/48		6/26/48 5%
						6/29/48 27%
						7/1/48 13%
						7/6/48 9%
						7/14/48 12%
						7/19/48 7%
						8/13/48 5%
6.	28	F.	3 months	8/12/48—8/25/48		8/18/48 8%
						8/24/48 3%
7.	25	F.	12 years	8/18/48—9/7/48		8/18/48 1%
						8/20/48 5%
						9/2/48 2%
8.	24	F.	18 years	8/21/48—9/1/48		8/21/48 2%
9.	53	M.	6 years	11/10/48—11/24/48		11/10/48 2%
						11/12/48 10%
						11/13/48 8%
						11/22/48 4%
10.	16	M.	13 years	10/24/48—11/7/48		10/24/48 7%
						10/26/48 5%
						11/3/48 2%
11.	47	F.	28 years	10/25/48—11/13/48		10/25/48 2%
						10/29/48 7%
12.	33	F.	8 years	10/4/48—10/9/48		10/4/48 10%
						10/8/48 11%

to hypertensive patients. They also state that it relieved attacks of bronchial asthma in some patients resistant to adrenalin or aminophyllin. They consider it safer than aminophyllin and point out that deaths due to aminophyllin have been recorded.

After considerable difficulty we obtained a limited supply of khellin for therapeutic trial. We employed tablets of 20 mg. each and administered them only by mouth. Our standard procedure was to give the patients 10 tablets (200 mg.) twice daily or, in exceptional cases, three times daily.

Because of our limited supply of the drug, we were able to treat only 12 cases of bronchial asthma. All of these patients were severe asthmatics, relieved during attacks only by large doses of adrenalin or aminophyllin, in some instances only by doses which a conservative physician would regard as potentially dangerous. Several patients claimed to receive only fleeting relief or no relief at all from adrenalin or aminophyllin. All of them had found benadryl and pyribenzamine disappointing.

All of these patients with one exception, who could not take the drug, experienced marked relief while in the hospital and taking khellin under our supervision. In most instances the relief was rapid and lasted as long as they continued taking the tablets. A summary of some of the essential data is shown in Table I.

A typical case was summarized in the case summary by the medical resident. "She was treated initially with aminophyllin intravenously, intermittently and continuously; nicotinamide, and required frequent injections of adrenalin. She was also given Amesec capsules (aminophyllin, grains two; ephedrine hydrochloride, grains $\frac{3}{8}$; amytal, grains $\frac{3}{8}$), all with only slight relief of the asthma. Attacks continued to be severe at night. Treatment was begun with khellin, 20 mg. tablets, 10 tablets twice a day. The patient consistently showed marked relief of asthma in 1-2 hours after khellin was administered

orally. She has had no toxic reaction to the drug, and was maintained nicely on 200 mg. bid."

Another summary. "The patient received large doses of benadryl up to 600 mg. daily, aminophyllin suppositories, all to no avail. She was then given pyribenzamine which produced no regression of symptoms. Khellin, 10 tablets, twice daily, produced some improvement. The dose was increased to 25 tablets daily, which resulted in complete regression of symptoms, except for one attack three days after khellin was begun. Three weeks after the institution of khellin medication, the patient was dismissed with no recurrence of the bronchial asthma. She was dismissed with khellin tablets with instructions to take 10 tablets twice daily decreasing the dosage daily by two tablets until none are taken except for an acute attack."

This patient was dismissed from the hospital July 23, 1948. She was seen on October 24, 1948, and stated she had remained free of attacks since leaving the hospital. At this time she brought with her a 16-year-old son, also a sufferer from bronchial asthma. This patient entered the hospital suffering from a mild asthmatic attack.

Now, one swallow, as Aristotle said, doesn't make a spring, and 12 cases do not prove the superiority or even the great value of khellin in bronchial asthma. We are convinced, however, from our admittedly limited experience, that khellin is of value in the treatment of asthma. Unfortunately at the present time it is an expensive drug; however, if it proves of great value, and is produced in greater quantity the cost will undoubtedly come down. We have obtained our supply from the Physicians' Drug and Supply Company of Philadelphia.

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The Use of Penicillin in the Ambulatory Treatment of Syphilis in Pregnancy *

Max S. Allen, M.D., and Mahlon H. Delp, M.D.

Kansas City, Kansas

The fact that syphilis is a rather common disease in the general population in the United States has been repeatedly brought to light by serologic surveys of isolated groups such as are carried out in pre-employment and pre-marital examinations. The incidence of syphilis in females is not accurately known, but its prevalence in young adult males was accurately measured in men examined for military service in the recent war. Thus, figures of the United States Public Health Service¹¹ show an incidence of 17.4 per 1,000 for white males between the ages of 21 and 35 years, and 253.3 per 1,000 for Negro males of the same age group. Although no direct inference regarding incidence in the female can be drawn from these figures, it seems logical to assume that the figures would not be significantly lower in females of the same age group, and the potential occurrence of syphilis in pregnancy is suggested. Among 809 cases admitted to the Obstetric Service of the University of Kansas Medical Center's Out-Patient Department during the year 1947, 39 cases of syphilis in pregnancy were encountered. This is an incidence of 4.8 per cent, or 48 per 1,000.

The management of syphilis complicating pregnancy actually involves two problems: (1) treatment of the mother's syphilis, which is of secondary importance to (2) prevention of or treatment of congenital syphilis in the unborn child. This situation offers practically the perfect therapeutic problem which can be dealt with prophylactically and preventively, anticipating successful results.

It is generally accepted that the spirochete does not invade fetal tissues until about the fifth month of pregnancy, and Dippel¹, in a study of the internal organs of fetuses aborted by syphilitic mothers, found no spirochetes in the fetal viscera prior to the 18th week of gestation. As might be anticipated, the intrauterine transmission of syphilis is greatest when the infection has been recently acquired, and diminishes throughout successive pregnancies. Treatment of syphilis in the pregnant female during the first half of pregnancy can be said to be truly prophylactic in nature so far as the fetus is concerned, since eradication of viable spirochetes from the mother's blood and tissues at this stage of pregnancy will actually prevent infection of the fetus. Treatment carried out in the last half of pregnancy should

be considered active treatment of an early infection in the unborn baby as well as treatment of the mother's disease.

The observations of Boas and Gammeltoft² in 1928 remain classic proof of the necessity for adequate treatment in the pregnant syphilitic mother as a means of preventing fetal mortality and congenital syphilis. Studying a group of 201 syphilitic mothers receiving no treatment during pregnancy, they reported 3.5 per cent of their children healthy while 96.5 per cent were syphilitic. Even minimal amounts of relatively ineffective therapeutic agents administered during pregnancy materially increased the proportion of live, healthy infants, and of 105 mothers receiving arsphenamine during or both before and during pregnancy, 15 to 20 per cent of the children were syphilitic and 80 to 85 per cent of the children were normal. These observations have been repeated numerous times, for instance by such an outstanding man as McCord³, and have led to the important conception that treatment during pregnancy, even with inferior chemotherapeutic agents, is a powerful weapon in the prevention of prenatal and congenital syphilis.

The ideal anti-syphilitic agent should combine the attributes of ease and simplicity of administration with the more important qualities of a high degree of effectiveness as a spirillicide and a low index of toxicity for the host. In treatment of the disease in pregnancy, the therapeutic agent must also be capable of penetrating the placenta readily. Penicillin administration more nearly approaches these criteria than any other method of treatment now available. Its effectiveness as a spirillicide is borne out by numerous reports of incidents of re-infection in penicillin-treated syphilis. Its toxicity is minimal, and administration is not technically difficult nor prolonged. It has been shown to pass through the placenta and pervade fetal blood, tissues, and amniotic fluid as early in pregnancy as 10 weeks. A single intramuscular injection of 100,000 units in the mother is capable of producing adequate bacteriostatic levels in the fetus.^{4, 5, 6, 7}

During the past four years, several groups of observers have reported their experiences with penicillin in the treatment of the syphilitic pregnant woman, and have indicated their belief in the superiority of this agent over previous chemothera-

*A cooperative study by the Departments of Internal Medicine, Obstetrics, and Pediatrics, University of Kansas School of Medicine.

peutic agents used for the prevention of prenatal syphilis. Ingraham⁸ has recently summarized the results of various types of penicillin treatment of the pregnant woman from the published reports of the several groups. His excellent discussion of the entire subject is complete, and his recommendations for maternal and infant follow-up are specific. He concludes, "Satisfactory dosage of penicillin to prevent congenital syphilis would seem to consist of a total of 2.4 million units or more given over a period of seven or more days."

The previous report of Ingraham et al⁹ constitutes the only published report of treatment of syphilis in pregnancy using oil-wax mixtures of penicillin. They report a group of 62 patients so treated with 84 per cent normal infants resulting when a total dosage of 4.8 million units was used.

Methods and Material

At the University of Kansas Medical Center during the two year period from December, 1946, to December, 1948, 125 cases of syphilis in pregnancy were treated in the Out-Patient Department. Treatment was carried out on an ambulatory basis, using Romansky formula penicillin-oil beeswax mixtures.* The original schedule of 3.0 million Oxford units in 12 daily intramuscular injections was later increased to 6.0 million units in 12 daily doses. Six intravenous injections of Mapharsen and four intramuscular injections of bismuth were given concomitantly with the penicillin in a few of the earlier cases. Since June 1, 1947, all cases have received 6.0 million units of penicillin without other therapy. Treatment was begun in each case on Monday with 600,000 units and continued at this level daily through Saturday. Treatment was omitted on Sunday and resumed on the following Monday with 400,000 units daily through Saturday. Thus, 6.0 million Oxford units were administered in 12 doses over a total period of 13 days.

Of the 125 cases treated, 12 of the mothers were sero-negative at the beginning of treatment and were considered as "cured" cases of syphilis. All 12 cases delivered normal infants. They are not included in this study. Sixty-three cases were followed through pregnancy and delivered in the Obstetrical Department of the Medical Center. Forty-seven of the 63 infants have been followed sufficiently to allow statements regarding the presence or absence of congenital syphilis.

Pre-treatment surveys of each patient included an estimate from the history or from previous knowledge of the patient as to the probable duration of the infection in the mother, a complete physical examination, and fluoroscopic and radiographic exam-

ination of the heart, chest, and aorta. Unless spinal fluid examination had been carried out recently, this was done in cases encountered in the first trimester of pregnancy. Quantitative serologic tests for syphilis (STS) were done in each case prior to treatment and each month thereafter until delivery. Titrated Kolmer and Kahn tests were carried out in each instance and were reported in terms of the greatest dilution of serum which produced at least a two plus reaction. Thus, a two plus reaction in a dilution of 1:64 was reported as 64 units. All tests were done in the serology laboratory of the University of Kansas Medical Center. Monthly physical inspections for evidence of mucocutaneous relapse or re-infection were carried out. Substantial increase in serologic titre (serologic relapse) or evidence of clinical relapse of the syphilis is considered indication for re-treatment. One case was re-treated on the basis of an apparent serologic relapse, although subsequent STS indicated that perhaps this re-treatment would not have been necessary. At delivery, quantitative STS were done on mother's blood and on umbilical cord blood. In many instances quantitative STS were done on the infant's blood during the latter part of the period of hospitalization (5-10 days). An attempt was made to get quantitative STS on the infant's blood at periods of three weeks, six weeks, three months, and six months after birth, although these observations are partially incomplete in some cases. Follow-up observations on the mother were carried out as in any other case of syphilis and are not included in this report.

Results

As shown in Table I, there was no instance of abortion, miscarriage, or neonatal death in the group of 63 mothers followed to delivery. The one still-

TABLE I
RESULTS OF PENICILLIN TREATMENT OF 63 PREGNANT WOMEN

PENICILLIN DOSAGE		NUMBER of PATIENTS	RACE		STAGE OF DISEASE IN MOTHER					UNSATIS- FACTORY OUTCOME OF PREVIOUS PREGNANCIES	WEEK OF PREGNANCY TREATMENT BEGIN			UNSATISFACTORY OUTCOME OF PREGNANCY			DELIVERED LIVING INFANTS SYPHILITIC								
			WHITE	COLORED	CONGENITAL	SECONDARY	EARLY LATENT	LATE LATENT	C.N.S. CARDIO-VASCULAR		1	16	24	32	ABORTION	MISCARRIAGE		STILL BIRTH							
																			15	23	31	40	MISCARRIAGE	STILL BIRTH	MISCARRIAGE
3.0 MILLION UNITS	No.	16	1	15	0	10	4	2	16	4	4	3	5	0	0	0	0	17	1						
	%	100	6.3	93.7	0	62.5	25	12.5	37.5	25	25	18	32	0	0	0	100	6.2							
6.0 MILLION UNITS	No.	47	5	44	5	23	17	0	12	10	12	13	0	0	1	0	46	1							
	%	100	54.93	96.17	42	48.9	36.2	0	25.5	21.3	25.5	27.7	0	0	21	0	98	21							

* Includes one set of twins

birth resulted from placenta praevia, and pathologic examination of the fetus and placenta failed to show evidence of syphilis. Sixty-three living infants were delivered, including one set of twins.

Only two obviously syphilitic infants were born in the entire group of 63 mothers. The mother of one of these made her initial visit to the pre-natal clinic four weeks prior to delivery and was found to have

*The penicillin used in this study was supplied by the Kansas State Health Department, Division of Venereal Disease Control.

secondary syphilis. Treatment was carried out as usual with 6.0 million units and she delivered two weeks after completion of the treatment. The baby

of titre in all instances and it is quite probable that these cases will continue to seronegativity without further treatment.

TABLE II
DATA FROM FOLLOW-UP STUDIES OF INFANTS

PENICILLIN DOSAGE		NUMBER OF INFANTS		MOTHER'S STS at DELIVERY		CORD STS		DURATION to SUSTAINED SERONEGATIVITY in INFANT						CLINICALLY NORMAL INFANTS		AVERAGE DURATION of FOLLOW-UP in DAYS
		No.	%	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	7 DAYS	3 WEEKS	6 WEEKS	3 MONTHS	6 MONTHS	OVER 6 MONTHS	LIVING SYPHILITIC INFANTS	SUSTAINED SERO-NEGATIVE	
															SERO-POSITIVE FALLING TITRE	
3.0 MILLION	No.	13		12	1	8	5	5	1	1	3	0	1	1	11	1
UNITS	%	100	92	8	62	38	38	77	77	23	0	77	77	84.6	7.7	354
6.0 MILLION	No.	34		29	5	29	5	7	3	14	3	0	1	1	28	5
UNITS	%	100	85	15	85	15	21	85	41	85	0	3	3	82	15	192

* From 12 pregnancies - Includes one set of twins

showed exfoliative skin lesions and x-ray evidence of syphilitic periostitis. The second mother who had latent syphilis was under treatment and had received 4.4 million units of penicillin when labor began at term. Again the infant showed evidence of syphilis in skin and long bones. Both babies received treatment with penicillin in the neo-natal period so that there was no opportunity of observing the long term effect of the pre-natal treatment.

It has been emphasized by Ingraham and others that seronegativity of the mother at delivery is not a pre-requisite to obtaining a normal infant, and that the great majority of mothers' will be sero-positive at term. Our experience is in accord with this view, 87 per cent of the mothers showing positive STS at delivery.

Positive serologic tests of umbilical cord blood obtained at delivery offer no prognostic value. This applies, of course, only to cases receiving treatment during pregnancy. The reagin responsible for positive serologic tests on blood from the umbilical cord is a composite of transferred reagin from the mother and that produced by the fetus. The former disappears rapidly from the infant's blood after birth. An increase in titre of the infant's STS should be taken as evidence of active infection in the infant.

Post-natal follow-up of 47 infants is summarized in Table II and it will be noted that 37 infants had positive STS on umbilical cord blood at delivery. At the end of six weeks 31 cases were sero-negative and at the end of six months 39 of the 47 cases were seronegative and remained so throughout the observation period. Two infants reached sustained seronegativity after six months of life. None of these infants had received anti-syphilitic treatment in the interim. Six cases showed no clinical evidence of syphilis when last seen and radiographic studies of long bones were negative. Their STS were still positive in low titre but were showing a progressive loss

Comment

Schedules using oil-wax mixtures or other slowly absorbable penicillin preparations in the treatment of syphilis in pregnancy have not been considered acceptable by the Venereal Disease Division of the U. S. Public Health Service¹⁰. At the University of Kansas Medical Center the majority of pregnant syphilitic women encountered are economically unable to afford hospitalization for treatment with aqueous penicillin solutions. Some form of ambulatory treatment became highly desirable in these cases, and if effective might be desirable in all cases. The present study, although small, would seem to indicate that results can be obtained with oil wax mixtures which will compare favorably with the published results of others using aqueous solutions. Results in this group of patients are superior to those reported by the University of Pennsylvania group¹² where a total dose of 4.8 million units of penicillin-oil-wax mixtures was used. This difference is perhaps more a result of the higher incidence of early symptomatic cases treated late in pregnancy by the Pennsylvania group than because of the higher total dosage in use at the University of Kansas Medical Center. Ingraham suggests that 2.4 million units of aqueous penicillin in seven days is adequate to prevent congenital syphilis. We have noted no significant difference in results with 3.0 or 6.0 million units total dosage although the number of patients is too small to permit any conclusions on this point.

Summary

1. One hundred twenty-five cases of syphilis in pregnancy were treated at the University of Kansas Medical Center with oil-wax mixtures of penicillin. All patients were treated on an ambulatory basis in the Out-Patient Department.
2. Sixty-three cases were followed to delivery. There were no abortions, miscarriages, or neonatal deaths. One still-birth resulted from placenta praevia and was not syphilitic. Two living syphilitic infants and 61 normal infants were delivered. Normal infants resulted in 96 per cent of cases.
3. Forty-seven infants were followed for an average of 138 days after delivery. None has shown evidence of relapse.
4. Where prenatal treatment has been adequate, maternal and umbilical cord blood need not be sero-negative at the time of delivery in order to obtain a normal, non-syphilitic infant.

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90th Annual Session

KANSAS MEDICAL SOCIETY

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See Announcement on Page 136

Complete program in April issue of the Journal

The Therapy of Burns

Creighton A. Hardin, M.D., and David W. Robinson, M.D.*

Kansas City, Kansas

A burn is a real surgical emergency. The life of a patient severely burned is immediately threatened and is in constant jeopardy until the burned areas are covered, either by the spontaneous regeneration of epithelium or by skin grafting. All therapy is directed, first, toward maintaining the circulating blood volume and, second, toward promoting prompt healing with a minimum loss of function. Death can occur at any time during any of the four clinical phases, namely, shock, toxemia, sepsis, and contracture.

Maintenance of the Circulating Blood Volume and Related Problems

The immediate problem consists of the prevention and treatment of shock. In order to bolster the blood volume, which falls very rapidly, replacement of the lost elements is begun at once. Plasma, water, and electrolytes leave the blood stream through damaged capillary walls and accumulate in volume in the burned areas. A rational plan of treatment is needed. The many formulae that have been devised empirically or based upon laboratory findings are disappointing. If strictly adhered to, each formula has its faults. The clinician's estimate of the patient is still the best guide, but one must start with some basic plan.

The percentage of the skin surface burned can be utilized to determine the amount of plasma and electrolytic fluid to be given. The table of Lund and Browder⁹ (Table 1) is useful. This estimation of the extent of skin surface is based on Berkow's² original work. One should overcome the temptation to overestimate the extent of the burn. The National Research Council in 1942 recommended that the formula of Harkins⁸ be followed, namely that 100 cc. of plasma with an equal amount of normal saline be given in the first 24 hours for each per cent of the skin surface burned. We have followed of late the plan of Cope and Moore⁴ that 75 cc. of plasma and an equal amount of electrolytic solution be administered the first day. One-half the total calculated replacement is given in the first eight hours and the remaining half during the following 16 hours. The clinical response of the patient, however, is always more important.

Some whole blood is advantageous from the beginning because, as has been shown by Moore and associates¹¹, blood has been lost from initial hemolysis at the time of the burn. Further, anemia is evi-

dent within a few days and becomes more important later due to repeated blood loss from frequent changes of dressings and from the effects of nutritional deficiency and bone marrow depression. Moyer, Coller, Vaughn, and Marty¹² used whole blood exclusive of plasma; Evans and Biggers⁵ advocated 500 to 1000 cc. of blood every six hours for the first day. We have felt that this approach exceeds the needs of the situation and is not practical. For some of the reasons given above, we routinely give some blood early, usually employing as blood volume replacement two parts of plasma to one part of blood. A severe burn of 50 per cent of the body surface would receive ordinarily from 3500 cc. to 5000 cc. of blood and plasma replacement of which approximately 3000 cc. would be plasma and 1500 cc. would be whole blood given within the first 24 hours. Depending upon the response of the patient, one-third to one-half these amounts might be needed the following day.

Oral administration of salt solution is preferable to the intravenous route. Large quantities can and will be ingested readily unless the patient is vomit-

NEW TABLE OF SURFACE PROPORTIONS IN DETAIL

LUND AND BROWDER						
AGE	BIRTH	1	5	10	15	ADULT
AREA						
Head	19	17	13	11	9	7
Neck	2	2	2	2	2	2
Anterior						
Trunk*	13	13	13	13	13	13
Posterior						
Trunk**	13	13	13	13	13	13
Buttocks	5	5	5	5	5	5
Genitalia	1	1	1	1	1	1
Upper						
Arms	8	8	8	8	8	8
Forearms	6	6	6	6	6	6
Hands	5	5	5	5	5	5
Thighs	11	13	16	17	18	19
Legs	10	10	11	12	13	14
Feet	7	7	7	7	7	7
TOTAL	100	100	100	100	100	100

*Without neck or genitalia

**Without neck or buttocks

The numbers given are the percentage of the entire skin surface for each anatomical part.

*From The Department of Plastic Surgery, University of Kansas Medical Center.

ing when the parenteral route must be used. A flavored mixture of one-third part of soda bicarbonate and two-thirds parts salt or sodium lactate made up in isotonic solution is useful. The mildly alkaline solution will help combat the tendency toward acidosis usually found early as can be shown by a lowered CO_2 combining power. In spite of the early reports of Underhill¹⁴ and the later work of Fox⁶, rapid and large unbalanced salt solution infusions are probably harmful. The rapid diffusion into the burned area of more sodium will draw more water and promote more edema at the expense of intravascular and perhaps intracellular fluid.

In addition to the above stated fluid requirements, the daily insensible water loss, 1500 cc. for an adult, must be replaced, if not by mouth, by the administration intravenously of five per cent glucose in water. The too rapidly given infusion of plasma can embarrass the heart and cause pulmonary edema, but usually plasma is given too slowly to maintain the falling circulating fluid volume.

Details and Guides of Management

The urinary output is a convenient measure of the adequacy of treatment. We employ an indwelling catheter which makes possible an accurate check. An output of 50 to 200 cc. per hour indicates adequate fluid therapy and, conversely, an output of from five to 30 cc. per hour for three or more hours calls for more fluids, usually plasma. A persistently low output with continued treatment means either inadequate fluid therapy or impending renal failure.

A water tolerance test⁴ has been suggested for differentiating these two causes of oliguria. Water containing five per cent glucose, 1000 to 1500 cc. in amount, is given rapidly by vein. This amount of infusion has not been found to be deleterious. The output is measured over the time of one hour. A clear-cut increase in urine indicates that the kidney is able to function but that the fluid demands are not being met. No increase in output is evidence that caution should be exercised in the face of impending urinary shutdown. The younger patient usually has considerable renal reserve but older patients may not have adequately functioning kidneys to meet the demands. We have seen outputs of 7000 cc. of urine by young patients who have received perhaps over-enthusiastic treatment. Present thinking on the therapy of anuria postulates that the damaged kidney be allowed to rest as much as possible, no effort being made to allow the usual intake of from 1000 cc. to 1500 cc. for the removal of urinary wastes. The insensible loss should be replaced plus only a volume per volume amount of fluid equal to the amount of scanty urine excreted in the preceding 24 hours.

Wound edema in the burned area occurs rapidly

and reaches its height after the receipt of the burn at about 48 hours. Resorption of this translocated fluid from the extracellular tissue spaces begins at that time. Further fluid therapy of such large volume is no longer necessary. The needs then are for only the replacement of the insensible loss and for adequate urinary output. A total intake of 3000 cc. to 4000 cc. of fluid is adequate.

Laboratory studies are helpful early and late but should not be leaned upon as the sole guide for therapy. Single or repeated reports on the various chemical constituents of the blood and urine give only a part of the whole picture which is not yet understood. Most useful early are repeated blood counts, hemoglobin determinations, and hematocrit readings, all of which will show the presence of hemoconcentration indicating the need of increasing the blood volume. Blood counts are indicated every two or three days at a later stage as a guide for the correction of anemia. Plasma proteins, plasma chlorides, N.P.N., and CO_2 combining power determinations are of some value but are not such important guides for treatment. Urinalyses give some indication of fluid requirements and renal damage.

Nutritional Requirements

Proper dietary management is a very important phase of the care of the burned patient. The diet should be of high protein and carbohydrate content with an average caloric value of 3000 C. for adults. Such a diet, as Abbott and associates¹ point out, is poorly tolerated initially but can be enforced by concentrated tube feedings and by between meals supplementation using protein hydrolysate in egg-nogs and milk. Protein is given in dosage of from two to four times the normal dietary requirements, and carbohydrate in large amounts is used to spare the ingested protein, making it available for healing and repair.

Vitamins in large dosage are added to the diet or administered separately. Several times the daily requirements can be given in one of the poly-vitamin proprietary preparations. We often employ the pure vitamins separately in order to obtain the large daily dosages recommended by Lund¹⁰. Ascorbic acid one to two gm., thiamine and riboflavin 10 to 20 mg., nicotinic acid 150 to 250 mg., and sometimes relatively smaller doses of vitamins A and D are recommended.

Local Treatment

Countless local medicaments have been applied to burns. The ointment used makes no fundamental difference providing the substance does no harm and is kind to the tissues. Any of the tanning agents are mentioned only to be condemned. Strict adherence to the basic fundamentals of surgery is what is im-

portant. A plan should be employed that avoids further contamination, converts a dirty wound into a clean one, keeps the wound clean, and keeps it at rest for a sufficient time to allow healing. The depth of skin lost can be accurately ascertained usually for the first time at the first dressing which is left undisturbed for two weeks after application. The plan is then to remove all the slough, to get the wound clean as quickly as possible, and to cover the open granulations by skin grafts.

In order to consolidate discussion, an outline of treatment which we feel follows these basic precepts is listed:

1. *General Appraisal*—The surgeon in charge, after his examination, decides whether the patient can stand an immediate clean up. A large bore needle is inserted in a suitable vein (cut down on if necessary) and blood samples are withdrawn, principally for blood count, hematocrit, and blood typing. Plasma is started as the syringe is removed from the needle. A blood pressure cuff is applied if there is an unburned arm available.

2. *Aseptic Precautions*—All personnel are masked and sterile gloves are put on while an assistant cuts away the clothes and places the patient on a sterile sheet.

3. *Analgesia*—Morphine sulfate in moderate dosage, gr. 1/6 to 1/4 for adults, is administered intravenously to act quickly and to shorten prolonged depressant effects. Light ether anaesthesia may be given to manage children if the tracheobronchial tree is unaffected by the burn.

4. *Cleansing Debridement*—When the patient is in suitable condition, the burned areas are washed rapidly but gently with white soap and sterile water. Detritus and loose skin are removed. Large blebs are unroofed but smaller blisters are left intact. No vigorous scrubbing is done and the cleansed areas are lavaged with sterile normal saline.

5. *Definitive Dressing*—Gloves are changed. A single layer of fine meshed grease gauze (number 44 gauze bandage impregnated with vaseline) is laid smoothly over the burned surface. One or two layers of standard surgical gauze flats (four by four inches) are next applied. A voluminous layer of sterile mechanic's waste or cotton is bound on tightly by coarse roller bandages. Elastic bandages may be employed but they can be applied too tightly with little effort. It is our concept that splinting a burned area is as important as splinting a fracture. Blair³ advocates pressure dressings for the following sound reasons: (a) elimination of dead space, (b) limitation of venous and lymphatic stasis, and (c) splintage for rest and healing.

6. *Position of Function*—Extremities should be

fixed by the dressing so that each joint is in its position of optimum function should fixation of the joint follow. These positions briefly are: fingers in semiflexion with thumb in opposition, wrist dorsiflexed, elbow at right angles, shoulder in slight abduction, flexion, and internal rotation, ankle at right angles, knee flexed ten degrees, and hip slightly abducted, flexed, and externally rotated.

7. *Tetanus Prophylaxis*—After negative skin testing, 1500 to 3000 U. of T. A. T. is given or, if previously actively immunized, (within one year) one cc. of toxoid should be administered.

8. *Chemotherapy*—Penicillin is started at once in adequate dosage to prevent infection. We prefer the crystalline product given every three hours to the long acting agent in an oil base. Sulfa drugs are not given routinely because of the unknown status of renal function and the dangers of crystalluria.

9. *Oxygen*—Oxygen is started at once if there is suspicion that the tracheobronchial tree has suffered damage. It also may be some benefit to a shocked patient.

The local treatment of a burn is done rapidly. Sterilized emergency packs should be made up beforehand and ready for immediate use. Vaseline gauze is more readily applied on impregnated bandage rolls. Cotton or mechanic's waste can be sterilized in bulk. Coarse surgical gauze, four inches wide and rolled in lengths of about five yards, is a useful outer bandage.

The First Dressing

An issue is made of the initial dressing which is left untouched for from 12 to 14 days after the primary dressing is applied. Pressures will be exerted by nurses, the family, the patient, and fellow patients to remove the foul smelling dressings. The reason for the doctor's insistence on not changing the dressing earlier is that the wound will be healed at the end of this time if the burn is of first or second degree. Third degree burns will finally be obvious by the gray, brown, or black eschar. Everyone of experience knows how impossible it is to tell the difference at the onset between a second or third degree burn unless the tissues are charred. This routine, of course, must be varied if a late spiking or sustained temperature indicates infection which could be inflicting severe damage on the delicate regenerating epithelium. In general, unless absolutely indicated, bandages are not removed for about two weeks because this new epithelium may be destroyed in so doing.

Late Care of the Third Degree Burn

The problem of the third degree burn is to prepare a suitable bed of granulation tissue as soon as possible for skin grafting. Surgical debridement is

the quickest method of removal of the necrotic adherent skin. Early excision in the operating room under anesthesia may save several days that would be spent in waiting for the slough to separate with daily changes of wet dressings. The acid debridement of burns does save some time but is disappointing because the pyruvic acid in corn starch paste is messy to prepare daily and is painful to apply. Saline tub baths are useful to remove adherent dressings, especially in children, but are not without danger.

Preparation of Granulation Tissue

The wound is ready for skin grafting when the following requirements are met. The granulations should be firm and relatively dry, bleed easily on touch, cherry red in color, flush with the surrounding skin edge, and relatively free of suppurative exudate. A thin white or pink line of regenerating epithelium around the wound periphery is fair insurance that the graft will take. Wound cultures are of some value. Hemolytic staphylococci or streptococci will often destroy the graft. Gram negative contaminants do not necessarily interfere with a good take of the graft⁷. Should the dressings be discolored with blue or green pus as evidence of infection due to *B. pyocyaneus* (*P. aeruginosa*), furacin soluble¹³ impregnated in the fine meshed gauze or the employment of a wetting solution of 1/4 per cent parachlorophenol will clean up the infection.

A plan for producing proper granulations in preparation for grafting is recommended:

1. Daily or twice daily changes of wet dressings which are started immediately after the first dressing. This is aseptically carried out, using masks and gloves.

2. Wound culture is made for predominant organisms.

3. Fine meshed gauze is laid next to the wound, followed by a layer or two of coarse gauze, then absorbent cotton in a sheet bound by a coarse roller of gauze. Furacin is often impregnated in the fine gauze.

4. Pressure is employed in the application of the bandage.

5. Dressings are saturated with saline and kept moist by wetting every three hours. An outer layer of oiled silk or rubber sheeting helps retain the moisture. Wet dressings are important to give free surgical drainage. Other solutions such as penicillin, tyrothricin, boric acid, parachlorophenol, one per cent acetic acid, or furacin in solution may be employed to advantage depending upon the bacteriologic flora of the wound.

Only a few days of the wet dressing procedure are usually necessary to produce a wound that will receive a skin graft of a high percentage of take. The

technique of skin grafting is beyond the scope or purpose of this discussion.

It is hoped that the day will come when no longer will be seen patients whose general debility, marked wasting, grotesque contracture, foul purulent wounds, and abject terror of being treated, show the incontrovertible evidence of neglect, ignorance, and procrastination.

Summary

1. Blood, plasma and salt solutions are administered in the indicated amounts to prevent shock and maintain the falling circulatory volume.
2. The treatment of anuria is discussed. A water tolerance test for differentiating the causes of oliguria is reviewed.
3. A detailed plan of initial local treatment is presented that converts a burn into a clean wound, prevents additional contamination, and keeps it at rest until healing has taken place.
4. A high carbohydrate, high protein diet supplemented by vitamins is recommended.
5. The initial burn dressing as a rule is left intact from 10 to 14 days.
6. The elimination of the necrotic slough of a third degree burn can be done quicker by surgical debridement.
7. The preparation of granulations, of a third degree burn, suitable for grafting can best be done by daily wet pressure dressing.
8. Skin grafting of full thickness burns is done as rapidly as possible in order to minimize anemia, dehydration, contractures and nutritional debility.

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CHILD WELFARE PAGE

Measles (Rubeola)—Prevention and Modification

Gamma globulin (immune serum globulin) is that fraction of human serum which contains the circulating antibodies. For measles it has largely supplanted the two most effective substances available in the past—immune placenta globulin and convalescent serum. The physician should keep in mind the following points concerning it:

1. *For Red Measles Only.*

It is particularly effective in modifying or preventing attacks of red measles (rubeola). It has not proved effective against any other disease except perhaps infectious jaundice.

2. *Method of Administration.*

The globulin is injected intramuscularly, preferably in the buttocks. For this a 20- or 21-gauge needle is most satisfactory. Pull back on the plunger of the syringe before injection to be sure the needle is not in a vein since globulin, as now prepared, must not be used intravenously. *Caution:* the globulin is a concentrated protein solution, hence, viscous and sticky. Do not fill syringe until prepared to make the injection; otherwise, syringe may become frozen.

3. *Time of Administration.*

To be effective, immune globulin should not be given later than the seventh day after exposure.

4. *Safety.*

A great many intramuscular injections have been given without severe reaction and with very little local pain in the dosage recommended.

5. *Prevention*

a. *Indications:*

Desirable in some cases such as extremely young infants, debilitated patients, and non-immune pregnant women.

b. *Dosage and time:*

.08 to .1 cc. per pound of body weight given as soon after exposure as possible.

c. *Duration of immunity:*

The globulin confers a passive immunity of 3 or 4 weeks duration only.

6. *For Modification.*

a. *Indications:*

In older children it is desirable to allow the patient to have a mild form of the disease. Modified measles may vary from a disease only slightly milder than the average case to one which exhibits one or two stigmata of measles.

b. *Dosage and time:*

.02 to .025 cc. per pound given on or about the fifth day after exposure.

c. *Duration of immunity:*

Permanent active immunity provided the disease has been modified and not prevented. In the modification of measles the physician must steer between complete suppression and no modification at all.

7. *Not for Treatment.*

Gamma globulin is ineffective in the treatment of measles.

CANCER PAGE

Cancer of the Larynx

Cancer of the larynx is responsible for about one per cent of deaths due to cancer and occurs most frequently in the fifth and sixth decades of life—rarely under 40.

Cancer of the larynx is present ten times more frequently in the male than in the female.

Intrinsic lesions account for 70 per cent of these cancers and extrinsic lesions account for 30 per cent.

Hoarseness of many weeks duration is the principal symptom of the intrinsic lesion.

Fullness in the throat, excess mucus and dysphagia are the principal symptoms of extrinsic tumors.

Metastasis is late in intrinsic lesions but early in extrinsic lesions.

Diagnosis is only positive by biopsy, but history, indirect mirror examination, and roentgenological study must be used to determine the extent of the lesion.

Treatment of the lesion is by the surgical approaches of laryngofissure and laryngectomy or by irradiation.

Finally, 85 per cent of intrinsic cancers of the larynx and 60 per cent of the extrinsic cancers of the larynx can be cured if treated early.

PRESIDENT'S PAGE

Dear Doctor:

Thanks again for the assistance you gave to the Rural Health Program. The success of this effort is an example of a good blend of politics and public relations. The people of Kansas expressed their wishes. The legislature delivered, and on February 18 the Governor christened the new program with his signature.

Kansas Medical Society Day, March 7, at the Medical Center was quite a success and probably will become an annual observance. This movement will play a part in attracting Kansas graduates to Kansas locations.

Organizational activities were outlined to all the junior and senior medical students. Dr. Haddon Peck discussed activities of the Society with the Farm Bureaus of Kansas and how doctors could fit into programs of the state Society. Dr. Conrad Barnes of Seneca presented facts about Blue Cross and Blue Shield programs and explained his views on rural practice. Victor Hildyard, a young doctor from Baldwin, told why he chose to practice in a small community and elaborated on his advantages there.

Mr. Clyde Coffman, a citizen of Overbrook, outlined many of the things a small community in Kansas could offer a doctor of medicine. He was ably supported by Mr. Clarence Rupp and Mr. Hal Harlan, other representatives from the Farm Bureau.

The ethics of medicine by Dr. Fred McEwen was a masterly address. Dr. Roy Croson inspired a great deal of interest in his explanation of plans for a Student Union Building on the medical school campus.

Medico-legal, narcotic and tax problems were explained by Mr. Kirke W. Dale. Medico-political relationships were discussed by Mr. Clarence Munns. Dr. J. F. Hassig and Mr. Blake Williamson outlined procedures of the Board of Medical Registration and Examination. Dr. Franklin D. Murphy summed up the medico-social possibilities.

All in all it was a very inspiring day and such efforts should go a long way toward getting Kansas staffed with well qualified physicians.

I assume that you are watching the papers and current magazines with interest concerning the activities of the A.M.A. in the field of public education. There will be an increasing amount of evidence presented through different media to give the people facts about the advantages of the free practice of medicine in contrast to free medicine.

The contribution you make to the A.M.A. will go a long way in the promotion of a constructive program of education and better public relations. The proponents of compulsory health insurance programs are keenly interested in how well the doctors support this program launched by the American Medical Association. You can scarcely afford to be an "anti" now, else they will use your attitude for their capital gain. The people will wonder why you object to giving them your side of the story.

At this season of the year I know your interests are rather widespread, but I hope you won't forget to pass along my appreciation to members of our Auxiliary and our medical assistants whenever you can, for the splendid work they have been doing.

Please watch for communications from the central office on matters of importance and announcements concerning the 90th annual session, and do not put off too long a request for hotel reservations for that meeting.

Sincerely,


President.

EDITORIAL COMMENT

A Tribute to Franklin D. Murphy, M.D.

In this issue, largely devoted to contributions from the faculty of the School of Medicine of the University of Kansas, it seems appropriate to pay tribute to Dean Franklin D. Murphy. Since his appointment to this position in July 1948, he has accomplished an unbelievable number of tasks. He has won the confidence of the medical profession and has begun a far-reaching program of public service.

In the span of a few months Dr. Murphy and other Kansas physicians developed the Kansas Plan, which has achieved not only national recognition in the lay press but has brought about the active co-operation of the Kansas Farm Bureau and the Kansas Medical Society. It has furthermore obtained a grant of some four million dollars for expansion of the School of Medicine.

It is noteworthy that Dr. Murphy's interests are not confined to the school. As a member of the Kansas Medical Society he has given his assistance to each project this organization pursues. He has spoken before most of the component medical societies. He has attended many committee meetings. He has co-operated in a real and personal way upon every occasion when his services were requested.

Dr. Murphy was appointed chairman of the Governor's Advisory Committee on Mental Institutions and has been a large influence in an effort now nearing success toward improving the mental hospitals in this state. He has spoken before national and regional meetings of the American Medical Association and before medical Auxiliaries and innumerable lay groups.

It is Dr. Murphy's philosophy that the University of Kansas School of Medicine must serve the people of this state. The school and the Kansas Medical Society have united their efforts toward the end that the entire medical profession may give the people of Kansas the finest medical care in the world.

The Kansas Medical Society is proud of the work that Dr. Murphy has accomplished and is happy to include the Medical School in its public service projects. The Journal, speaking for the Society, wishes him many years of continuing success on ever widening planes, and pledges its support to Dr. Murphy, his Board of Regents and his faculty in the interest of the people of Kansas.

Student Union Building

A Student Union Building on the campus of the University of Kansas School of Medicine is one of

the greatly needed additions to the school which will not be provided in the Rural Health Bill. The Kansas Medical Society, recognizing the value of this building both to the students and to those members of the profession who visit the school for graduate education, is planning to assist in the fund raising for this project. Detailed announcements will be given in the near future when the campaign begins, but until those details are available the Journal wishes to advise the profession that planning is under way.

Dr. F. R. Croson of Clay Center has been appointed by the president with the approval of the Council as chairman of this project. He is currently gathering information and organizing the work that will be done in obtaining the necessary donations from the membership of the Kansas Medical Society. Dr. Croson will make a detailed announcement to the membership in the near future. For the present, however, it is known that \$65,874.47 is already available through pledges and donations made for the Francisco Memorial and the Student Union Building. It will take considerably more than this amount before the structure may be completed, and it is that money that the Kansas Medical Society proposes to raise.

Several factors combined to make the project advisable for the Society. One is the fact that the union building will contain dormitory facilities which will be available for use by Kansas physicians visiting the school. This will make it possible for them to live on the campus and eliminate the time consuming necessity of traveling across Kansas City for lodging. A second factor is that this will become a memorial symbolizing the co-operation between the Medical Society and the school. Following directly after the legislative approval of the Rural Health Program, it seems appropriate that the medical profession offer a tangible expression to the people of Kansas of its faith in the school and of its sincerity in working toward a sounder distribution of medical care for this state. And this gift from the profession will be a daily point of contact with the students at the school which should be of material assistance in making the students at the school conscious of the profession and of its interest in them.

The School of Medicine Today

In the second annual University of Kansas Medical School number of the Journal of a year ago, a statistical and factual report was made on the physical setup and accomplishments of your Medical Center. This year it is desired to report changes that

have occurred in the past year and to stress certain features not previously mentioned.

As in the past, the chief function and concern of the Medical Center is the instruction of students in medicine and the allied sciences. Table I indicates the status of the present student body. It will be noted that there is a total of 334 medical students, which is a gain of 24 over last year's total. There are 129 student nurses which is a gain of 42 over the previous year. There are also a greater number of technicians, therapists, dietitians, etc., which constitute a total gain of 76 for the entire student body which now numbers 594.

At the present time, there are over 200 applicants from Kansas for the 1949 freshman medical school class who meet minimum requirements. It may be possible, with increased appropriations from the present legislature, to accept about 100 applicants. This means that over 100 Kansas boys and girls, who have met full requirements for entrance to the Medical School, must be denied admission. Since admission to out-state schools is most difficult, it follows that at least 50 per cent of these fully qualified students must forego a medical education and plan to enter other fields of training. If the supply of physicians were plentiful, this would not be too disturbing, but since the reverse is true, particularly in our own state, it is a matter for much concern.

Next comes the question of how students are to be chosen for the 1949 class. It is unfortunate that about the only common yardstick of measurement is the grade average. It is readily acknowledged that grades do not always indicate the true worth, ability or potentialities of the student. Other factors will, no doubt, be taken into consideration, but the fact

remains that grade average will play an important part. The admissions committee faces a most difficult and unwelcome task in choosing the 1949 class. They have already spent much time on this problem, and much more study will be required. Unintentional and unavoidable inequalities, injustices and hardships are inevitable, but it is certain that the committee will try to make as just and equitable selection as is possible under the circumstances. If any member of the Society has a solution to the committee's dilemma, he should promptly appraise them of it.

Table II indicates the geographical source of the medical students. The senior class is a hold over from the war days and the army and navy student programs. Hence, the large number of out-state students in this class. The other three classes are post-war and conform to the usual geographical pattern.

Three major changes have been made in the student curriculum in the last year. First, in an effort to accommodate as many medical students as possible, the four quarter system has been established. Thus, the full calendar year is utilized for teaching instead of only nine months as was the previous case. Only three-fourths of the junior or senior class is present at any one time as one-fourth of the class is always on vacation. Second, didactic teaching has been materially reduced and replaced by small group bedside and patient contact teaching. This innovation of necessity requires more man hours of teaching and greater space. In other words, it is a more expensive but certainly more efficient method of instruction. The change was made even though funds were not available, but with the hope that sufficient funds might be made available in the future to properly implement this mode of teaching. Third,

TABLE I
ENROLLMENT 1948-1949

Medical Students:	Men	Women	Total
Freshmen	80	4	84
Sophomores	78	5	83
Juniors	77	8	85
Seniors	74	8	82
Total	309	25	334
Nursing School			129
Residents			49
Interns			13
Other Enrollment:			
Occupational Therapists			6
Physical Therapists			16
Medical Technicians			18
X-ray Technicians			3
Dietitians			3
Applied Basic Science Students			15
Post Graduate Specials			3
Graduate Students			5
Total			594

TABLE II

Senior Class:	Sophomore Class:
Kansas	Kansas
Missouri	Missouri
New York	Puerto Rico
Arkansas	
California	Total
Colorado	
Maine	Freshman Class:
Michigan	Kansas
Ohio	Missouri
Pennsylvania	Oklahoma
Washington	
Total	Total
Junior Class:	
Kansas	
Missouri	
Maryland	
Total	

junior students now function as ward clerks in the hospital and seniors serve in the out-patient department. This is a reversal of the previous method. To date, these changes are said to be working more satisfactorily and more efficiently than the old system.

Several additions to the physical plant have been made in the past year or are in the process of construction. On July 1, a children's orthopedic ward of 22 beds was opened. This was constructed by remodeling and adding to space on the sixth floor which had previously been used chiefly for living quarters. The governor's emergency building fund contributed \$25,000 to the cost of construction and the remainder of the \$43,000 total cost was borne by the Medical Center. This ward was chiefly constructed in an attempt to relieve the bed shortage at the time of polio epidemics. In the summer of 1946, there were 298 cases of acute poliomyelitis admitted to the Medical Center. One-half of the children's pavilion was closed and turned over for the housing of these children, thus depriving children with other conditions from hospital care. At the end of the polio child's isolation period, there were no beds elsewhere in the hospital where he could be transferred for orthopedic care. Thus, the new ward was created with the idea of relieving the bed shortage. Since the new ward has been full, usually with a waiting list since it has been opened, it is obvious that there is still a marked shortage of beds and in case of an epidemic of poliomyelitis, children suffering from other disabilities will have to forego hospital attention until some other time. It has always seemed to be the height of the "cart before the horse" idea as well as unguided emotional reasoning that there are ample funds with several agencies vying for the privilege of hospitalizing the victims of poliomyelitis when there are no hospital beds available. There is little point in giving a child a dime for an ice cream cone, if there are no ice cream cones available, or if, to obtain a cone, it must be taken from another child who also likes ice cream.

Practically completed and now partially in use is an additional floor to the Hixon Laboratory of Research. This floor will house an up-to-date animal house and was built at a total cost of \$25,000. The legislature granted \$20,000 of this and the remainder came from other sources. This addition was made necessary due to the increase in the Center's research activities since the war and in particular, Dr. Herbert Wenner's studies in poliomyelitis, which require large numbers of monkeys.

Nearing completion and possibly available about April 1, are the additional four floors to the connecting corridor. Construction cost was \$700,000 and furnishings and equipment, an additional \$200,000.

This entire sum was obtained by legislative grant. This construction will provide for a new emergency room set-up on the basement level, expansion for the badly cramped x-ray department on the first floor and a new operating room suite on the fifth floor. The second, third and fourth floors will provide space for 88 beds. The hospital will not gain this number of beds, however, as some of the present bed space will need to be utilized as classrooms. Up to the present, there have been no classrooms in the hospital, so classes, of necessity, have been held in the already crowded corridors, an almost impossible situation. The new operating room suite will consist of five major operating rooms, a plaster and fracture room, tissue laboratory and a much larger utility and storage space.

On February 16, the legislature passed the rural health measure which appropriated \$3,862,560 for new buildings and equipment for your Medical Center. This measure has attracted nationwide attention with much favorable comment and it is evident that the plan will be widely copied. Specific appropriations were as follows:

<i>Project</i>	<i>Capacity</i>	<i>Cost</i>
Psychiatric ward building	75 beds	\$481,860.00
Chest diseases ward building	75 beds	481,860.00
Two floor addition to Eaton pavilion	75 beds	170,755.00
Two floor addition to out-patient building		306,395.00
New wing to nurses' home		432,630.00
Service building		811,957.50
Basic science building		757,102.50
Equipment		420,000.00

The federal government will contribute \$460,000 toward the construction of the psychiatric and chest disease building. These funds, which were made immediately available when Governor Carlson signed the bill, will permit the departments now housed in the outmoded, squalid and cramped quarters of the old school near Southwest Boulevard to be moved to the main campus at 39th and Rainbow Boulevard. It will also provide housing for the last three years of the medical school curriculum instead of two and one-half. The present appropriation for the basic science building is for one wing only. When this building is completed, some time in the future, it will then be possible to house the entire four-year medical course on the Kansas City campus.

During the year, several important faculty changes have been made. You are well acquainted with some of these and they will be mentioned only briefly.

On July 1, Dr. Franklin D. Murphy assumed his duties as dean of the Medical School, replacing Dean Wahl who retired. Dean Murphy's three-point rural health program has received national acclaim and he is much sought as a speaker to enlighten other states as to this plan. Doctor Wahl remains with the Center as professor of pathology and head of the department of pathology.

Dr. Robert E. Stowell came to the Center from Washington University Medical School to head the newly created department of oncology, with the title of professor of pathology and oncology. Doctor Stowell and staff are already busy on an intensive cancer research project.

Dr. Eldred V. Thiehoff is the new head of the department of public health and preventive medicine and replaces Dr. E. G. McGavran in this capacity. Dr. Thiehoff received his A.B. and A.M. degrees from the University of Missouri, his M.D. from the University of Pennsylvania and his M.P.H. from Johns Hopkins University. Dr. Thiehoff came to the Center from Peoria, Illinois, where he was commissioner of health.

Miss E. Jean M. Hill has just assumed her duties as the new director of nurses. Miss Hill received her A.B. degree from the University of Kansas, her B.N. from Yale University and her M.S. in Administration in Schools of Nursing from Western Reserve University. Before returning to Kansas Miss Hill was instructor in nursing education at Teachers College, Columbia University, New York.

Two well known members of the faculty were lost through death, Dr. Lewis G. Allen, professor of clinical roentgenology, and Dr. J. S. Betz, instructor in ophthalmology. Their loss is deeply regretted.

The following is a list of faculty promotions during the year:

Buford G. Hamilton from associate professor of obstetrics and gynecology to clinical professor of obstetrics and gynecology.

Ferdinand C. Helwig from associate professor of pathology to clinical professor of pathology and oncology.

Laverne B. Spake from associate professor of otorhinolaryngology to clinical professor of otorhinolaryngology.

William C. Young from associate professor of anatomy to professor of anatomy (Lawrence Division).

Tom R. Hamilton from assistant professor of pathology to associate professor of pathology and oncology.

Russell C. Mills from assistant professor of biochemistry to associate professor of biochemistry (Lawrence Division).

Paul W. Schafer from assistant professor of surgery to associate professor of surgery and oncology.

Ward W. Summerville from associate professor of pathology to associate professor of pathology and oncology.

Max S. Allen from associate in medicine to assistant professor of medicine.

M. L. Bills from associate in neurology to assistant professor of psychiatry and neurology.

G. L. Harrington from associate in neurology to assistant professor of psychiatry and neurology.

David W. Robinson from associate in plastic surgery to assistant professor of surgery and oncology.

TABLE III

Cancer Research	\$118,979.25
Donors:	
National Cancer Institute; Kansas Division American Cancer Society; Los Alamos Division of Atomic Energy Commission; American Cancer Society; American Cancer Institute; Mrs. L. L. Burchinal, Formoso, Kansas; S. G. Normand, Parkville, Missouri; Mrs. Wesley Sorg, Denison, Kansas; Miss Neva Clark, Chapman, Kansas; J. O. Williams, Veterans Administration, Kansas City, Missouri; Mrs. J. A. Brody, Kansas City, Missouri; Fortnightly Club, Lawrence, Kansas; Mrs. W. E. Lyon, Broken Arrow, Oklahoma; Charles R. Winger, Johnson, Kansas; W. T. Jones, Johnson, Kansas; Victor Dimitt, Johnson, Kansas; Wilma N. Winger, Johnson, Kansas; J. N. Hugg, Kansas City, Kansas; Edyth Spicer, Joplin, Missouri; and Mr. and Mrs. Cornelius Ashley, Kansas City, Kansas.	
Poliomyelitis Research	\$60,300
Donor:	
National Foundation for Infantile Paralysis.	
Lectureships and Scholarships	\$36,500
Donor:	
E. J. Curran, M.D.; Mrs. Logan Clendening, Mrs. A. J. Anderson, Lawrence, Kansas; T. W. Cloney, Sedalia, Missouri; L. L. Marcell, Kansas City, Kansas; C. T. Thompson, Kansas City, Missouri; A. M. Ginsberg, M.D., Kansas City, Missouri, and Mrs. Samuel S. Murdock, Jr., Sabetha, Kansas.	
Teaching of Psychiatry	\$37,460
Donor:	
United States Public Health Service.	
Cardiovascular Research	\$20,005
Donor:	
H. J. Haskell, Kansas City, Missouri; O. J. Connell, Jr., El Dorado, Kansas, and National Emergency Special Equipment Fee Fund.	
Other Research Projects	\$19,560
Donor:	
United States Public Health Service; Mr. George Breon, Kansas City, Missouri, and Mr. Dixon Fagerberg, Prescott, Arizona.	
Furnishings, Equipment, Books, etc.	\$14,001.01
Donor:	
Mrs. Logan Clendening; Dr. and Mrs. L. B. Spake; Shawnee-Mission Chapter, American Red Cross.	
Buildings	\$5,000
Donor:	
William Volker Fund, Kansas City, Missouri.	
Cancer Relief	\$325
Donor:	
Charles H. Stoner, Kansas City, Missouri, and Miss Dessie Myers, Kansas City, Missouri.	

Sylvia Allen from instructor in psychiatry to associate in psychiatry and neurology.

E. H. Trowbridge, Jr., from instructor in psychiatry and neurology to associate in psychiatry and neurology.

Damon Walthall from instructor in pediatrics to associate in pediatrics.

A. M. Ziegler from instructor in surgery to associate in surgery.

T. R. Jones from assistant in medicine to instructor in medicine.

Gordon Voorhees from assistant in medicine to instructor in medicine.

Harry Statland from assistant in medicine to instructor in medicine.

For its existence, your Medical Center depends upon funds from three principal sources. First, the state legislature and, as already noted in this report, they have been generous. Second, federal grants in aid, and third, contributions from institutions, societies and individuals. It is gifts of this third group we now wish to report. Table III lists the gift, donor and purpose of the gift for all contributions received in the past year. It is of interest to note that the bulk of these funds come from without the state.

It is felt that in general there is much greater interest throughout the state in the Medical Center and its problems. The future looks brighter, problems are in the process of being solved and it is hoped that the people of Kansas will be able to have a feeling of pride in their Medical Center.—*James B. Weaver, M.D.*

Medical School Appropriation is Granted



An important moment in the history of medicine in Kansas is pictured above. Governor Frank Carlson, seated at his desk, is signing the bill which appropriates \$3,862,560 to the University of Kansas School of Medicine for expansion of present facilities. This measure, popularly known as the Rural Health Bill while it was being debated in the legislature, was approved by the Governor at the ceremony shown above on February 18, 1949. Standing at the Governor's right is Dr. C. H. Lerrigo. Grouped around the desk, from left to right, are: Representative John L. MacNair, one of the sponsors of the bill; Charles B. Newell, business manager of the School of Medicine; Representative Paul R. Shanahan, co-sponsor of the bill; Dr. J. H. A. Peck, president-elect of the Kansas Medical Society; Dr. Franklin D. Murphy, dean of the school of Medicine; Representative Lawrence J. Blythe, co-sponsor of the bill, and Dr. O. W. Davidson, president of the Kansas Medical Society.

Case Reports from the University of Kansas Medical Center

Clinical Pathological Conference

Edited by Glen R. Shepherd, M.D., and Mahlon H. Delp, M.D.

Case History

A 64-year-old white male, a tavern-owner and bartender, entered the hospital on October 29, 1948, and died November 11. His chief complaints on admission were jaundice, swelling of the legs, and a hernia.

About six months prior to admission, the patient noticed for the first time a right inguinal hernia, which had always been reducible and gave him little trouble. Six weeks before admission, he noticed that his ankles and legs were swollen but without pain. The swelling became more marked in the following month. He treated it with hot packs and the swelling decreased greatly.

Ten days previous to admission, the patient was noted to be yellow by a customer at the bar. About six days later, he became acutely ill with nausea and vomiting and the hernia was no longer reducible. The vomitus contained some coffee-ground material; the stools were black in color, and the urine was quite dark. He had some right upper quadrant pain. He was put on a low fat diet, the jaundice regressed, stools became normal brown in color, and his urine was less highly colored. There were no other specific complaints in the past six months except that he had noticed some loss of energy and strength, together with an eight-pound weight loss. About six weeks before admission, he claimed having stopped heavy drinking. Until then, he had drunk as much as a pint to a fifth of whiskey daily for years.

Nothing significant was elicited in the past history or the family history. In addition to the foregoing, the system review revealed that he had had occasional nausea and vomiting for a number of years, usually associated with excessive alcoholic intake and that his food intake had been poor for years, especially while drinking excessive amounts.

Physical examination showed an overweight white male not appearing acutely ill. The skin had an icteric tinge, with conjunctiva definitely icteric. Fundoscopic examination showed minimal arteriosclerosis. No abnormal findings appeared in head, neck, heart, or lungs; B. P. 120/70; pulse 84, full and regular. Abdomen was moderately distended with a fluid wave noted. The liver was enlarged four fingers below the costal margin, but it was not tender on admission. There was a large right inguinal indirect hernia which was reducible. The prostate felt neither enlarged nor nodular. One plus pitting edema of the legs was noted.

Laboratory examination revealed the following:

urinalysis—faint trace albumin, 1.2 per cent sugar, numerous pus cells per hpf, occasional hyaline cast; blood study—RBC 2,880,000; Hb 51 per cent; WBC 10,450; differential showed polys 59 per cent, monos 10 per cent, eosinophiles 4 per cent, basophiles 1 per cent; serology negative. Blood chemistry—NPN 34.5; sugar 142 mgm per cent; sodium chloride 390; total protein 4.45 with albumin 2.10 and globulin 2.35. Hepatogram showed icteric index 20 units, cephalin cholesterol three plus, thymol turbidity eight units, cholesterol 200, cholesterol esters 50 per cent, prothrombin time 50 per cent of normal, urine urobilinogen 12.8 units in two hours, fecal urobilinogen 40 mgm in 24 hours. The sedimentation rate was 12 mm. in one hour.

Gastric Analysis			Glucose Tolerance Test		
Hour	Free HCl	Total Acid	Hour	Blood sugar	Urine sugar
F	0	7	F	169	3.0%
15 min.	2	10	1	296	3.3
30 min.	4	8	2	328	3.3
45 min.	4	10	3	342	6.3
60 min.	----	----	4	334	10.0
			5	312	6.6

EKG showed ventricular premature contractions, intraventricular conduction defect, myocardial damage, probable basis being coronary sclerosis.

After entering the hospital, the patient was placed on a diabetic and Patek diet but did not eat well and had considerable nausea. He could not be said to have eaten enough to have been on a diabetic regimen. Five days after admission he vomited some coffee-ground material, became drowsy, and after this time showed increasing lethargy and irrationality. The blood carbon dioxide combining power was 65.3 volumes per cent. He also developed edema, a tender liver edge, and refused to eat. On his ninth day, a Levine tube was inserted but no food could be given because of repeated vomiting. Gastric suction showed coffee-ground material and bright blood during the last few days. He was given the following medications: intravenous glucose to 4000 cc. daily, two blood transfusions, one unit serum albumin, crude liver and vitamin B parenterally, hykinone, and penicillin. He developed increasing icterus, with an index of 40 units. Lethargy became more pronounced with some aimless movements. On his 13th hospital day he developed spasticity of the left arm and hypotension with blood pressure of 60/40, and ceased respiration at 12:30 a.m. During the last 24 hours, the patient was prac-

tically anuric, with only 50 cc. of extremely dark urine produced. The urine output had been adequate until the last day.

Differential Diagnosis

Dr. Delp, Chairman: Mr. Bauer, please contribute your discussion of the differential diagnosis.

Mr. Bauer, Student: With this history of liquor drinking for years, the first diagnosis which comes to mind is alcoholic cirrhosis. In the differential diagnosis, with sudden onset of pain, one must think of impacted stone in the common duct (which is usually chronic and unlike the present case), of carcinoma of the head of the pancreas (which can't be entirely ruled out on the history alone, although it too usually has a more chronic course). The rapidity of this patient's course brings in the possibility of acute or subacute yellow atrophy. Hemochromatosis is another possibility, but can be ruled out not only by its rarity but also because such a case was presented here recently. This case seems to me to be alcoholic cirrhosis, which will explain the findings of hypoproteinemia and edema of the extremities. Although the abdomen was not tapped to demonstrate fluid, the increasing abdominal pressure from fluid might explain the hernia. The nausea and vomiting occurred when the man's illness was established and probably because of obstruction of liver functions. Esophageal varices could explain the vomiting of coffee-ground material and later the red blood after Levine tube was put down.

A gastric acidity showing hypochlorhydria is not easily explained on the liver findings. But low blood chloride has an influence on the stomach's ability to secrete acid. Chronic gastritis from alcoholism might lessen gastric acidity.

The glucose tolerance curve rises too late to maximum for a typical diabetic curve. One might theorize that chronic pancreatitis and decreased liver function impair the carbohydrate metabolism.

Hepatoma, either primary or secondary, or cholangioma should be considered in the differential diagnosis and these tumors are associated with cirrhosis.

Dr. Delp: What was the cause of death? Did the patient have diabetes?

Mr. Bauer: The patient died from inanition, hypoproteinemia and anemia, with a downhill course. I wouldn't care to state whether the patient had diabetes mellitus.

Dr. Wheeler: I first saw this man on a house call when he first became acutely ill. He had a strangulated inguinal hernia. Five days later he came to the hospital. His stools were unquestionably black. I saw his vomitus on one or two occasions and it was definitely coffee-ground in character. He had an acetone breath from the start which continued

throughout his hospital stay, although his blood carbon dioxide combining power was 65 volumes per cent from time to time.

Pathological Report

Dr. Storsteen, Gross Pathology:

Icterus; one plus edema of the legs and back; right inguinal hernia.

3000 cc. peritoneal fluid, clear.

100 and 300 cc. clear fluid respectively in right and left pleural cavities; each lung weighed 600 grams and appeared congested.

Heart weighed 375 grams, soft and flabby with moderate atherosclerosis coronary arteries.

Liver weighed 1540 grams, of firm consistency except for one area which felt soft and mushy, surface nodular and cut with resistance; fibrous strands separated greenish-brown, yellow, or red parenchyma; soft mushy mass in right lobe, rusty brown in color, five cm. diameter, appeared well-circumscribed; five other similar areas noted, smaller, with diameters five to 15 mm.

Kidneys weighed 200 grams each and felt rather soft.

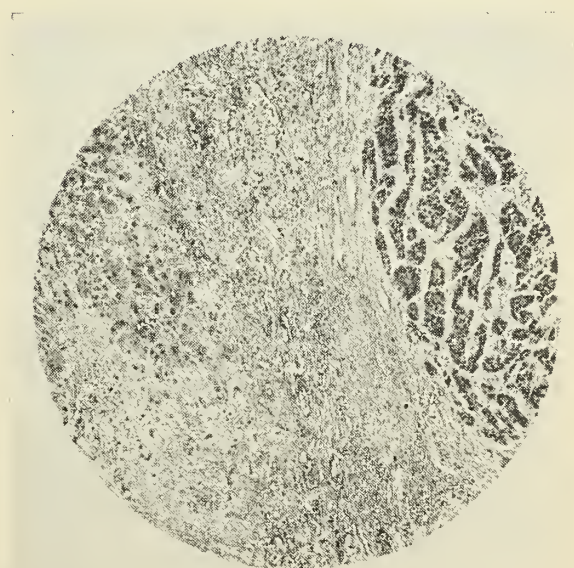
Esophagus darkly pigmented with hemorrhage into mucosa and vessels dilated; stomach contained 100 cc. of brownish-black material.

Brain weighed 1500 grams and showed no evidence of abnormality on cut section.

Gross Diagnosis:

Portal cirrhosis, multiple hepatoma, esophageal varices, pulmonary congestion and edema, flabby heart, bilateral hydrothorax, hydroperitoneum, and moderate atherosclerosis of coronary arteries and aorta.

Dr. Boley, Microscopic Pathological Report:



Photomicrograph of liver section. The darker cells represent the tumor.

The tumor nodule in the right lobe of the liver is a primary hepatoma with one large tumor and several satellites. We weren't able to express tumor thrombi from veins. Decreasing size of the lobules, distortion and inability to find central veins is apparent. There are proliferating bile ducts but no evidence of duct malignancy. The tumor tissue is not very undifferentiated and not much different from normal liver cells. Arrangement and architecture is characteristic of carcinoma of hepatic cells with necrosis in the tumor. There is a pseudoencapsulation around the tumor but invasion is apparent in many places into portal spaces. Because of the proliferating appearance of bile ducts, it is harder to pigeon-hole this tumor. One might think of a malignancy rather than a proliferative process. However, even the bile ducts showing distorted nuclei are regular in staining and size.

Discussion

Dr. Boley, Pathologist: In 27 cases of carcinoma of the liver admitted to the Medical Center Hospital, the mean age was 58 years with a 2.3/1 ratio of males to females. The ages ranged from 13 to 85 years. Anemia was usually present, with average Hb 65 per cent. There was a slight to moderate leucocytosis (8,000 to 15,000) in 47 per cent of the cases, and moderate to marked leucocytosis (26,000 to 48,000) in 29 per cent. Eighteen per cent had jaundice. The average liver weight was 2850 grams. Cirrhosis was present in 59 per cent of these cases of carcinoma of the liver. Of this 59 per cent with cirrhosis, 78 per cent were hepatic and 45 per cent bile duct cirrhosis (some showing both types). The distribution of metastases was 37 per cent to lung, 33 per cent to regional lymph nodes, 11 per cent to pleura, and seven per cent were peritoneal. In another series of 1300 cases of cirrhosis, 4.5 per cent had cancer of the liver. The most commonly occurring clinical findings seem to be leucocytosis, fever, anemia, and weight loss.

Dr. Wahl, Head, Pathology Department: Carcinoma of the liver is uncommon while cirrhosis is common. In this case, the most striking feature of the liver is the extreme distortion in architecture, fibrosis, and irregular hyperplasia. Pathologists like to classify tumors but it is hard to do so in these. This particular tumor caused me a lot of trouble in classification because some fields looked like cholangioma and others looked like hepatoma.

The cause of cirrhosis may be related to the cause of hepatoma. Cirrhosis is produced by changes in diet. In experimental induced cirrhosis, atypical regenerative phenomena appear which may progress to malignancy.

Dr. Stowell, Oncologist: An understanding of the causes of human cancer is important. We know a little more of the cause in this type of cancer. There

is a frequent association between cirrhosis and cancer in man. The difference in incidence in different localities suggests an environmental factor, perhaps diet. One and two-tenths per cent of Europeans with cirrhosis have cancer, as do 2.2 per cent of Americans, and in certain of the oriental groups with cirrhosis 14 per cent are said to have cancer. Butter yellow substances will produce tumors, experimentally. Carbon tetrachloride produces liver tumors as will low protein diets, and in these there is an accompanying fibrosis, with changes in morphology of cells, and regenerating types of cells on microscopic examination.

Riboflavin in diet protects against experimental tumors in animals, as will cystine. This is not necessarily true in human tumors.

Liver exposure to a toxic agent causes a reaction of liver cells which may be common to the cause of liver cancer, since fibrosis accompanies each. The alcoholic regimen is important by inducing a deficiency of certain food factors.

Death usually occurs six months after tumor of the liver is diagnosed. Alteration of the diet won't then influence the course of the tumor. There may in the future be chemotherapeutic agents to use. It is known that normal liver cells develop different types of metabolic patterns under the influence of toxic substances. If this abnormal metabolism could be interrupted, it might interrupt the course of the tumor. However, there is not yet complete experimental evidence to uphold this hypothesis.

Dr. Delp: There is another interesting element about the prognosis in these patients. Dr. Bartlett has had a rather unusual experience with a so-called hepatoma. I would like to have him tell us about that patient.

Dr. Bartlett: The particular patient referred to was operated on in February, 1947. In a short time, he had developed a large tumor in the right upper quadrant of the abdomen. Operation proved it to be a large liver tumor. Biopsy was taken and reported as a primary hepatoma of the liver cell. He eventually recovered from the operation and is now still alive 22 months later, without x-ray therapy or other treatment except routine supplements to help protect the liver. He has developed a rather severe nephritis which amounts to a high degree of albuminuria and a slight elevation of the NPN, but what his course will be we don't know. The tumor has continued to grow gradually and still is present, being stony hard. The man is working at his job, however.

Dr. Major, Chief of Medicine: Whether this patient had diabetes mellitus is another interesting feature. We had a patient who had diabetes with

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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

*Collins, E. N.: The Diagnosis and Treatment of Irritable Colon: Physiologic, Local, Irritative and Psychosomatic Factors, M. Clin. North America 32:398 (March) 1948.

cirrhosis. However, in that case, the diabetes had been present for 15 years. I would like to ask Dr. Shepherd's opinion about the diabetic status of this patient.

Dr. Shepherd: Among the many functions of the liver, carbohydrate metabolism occurs in part. This patient's liver was not able to maintain such functions, with a consequent impairment of carbohydrate utilization. In that sense, this patient had diabetes mellitus. In the sense of there being a lesion of pancreatic islets with an insulin deficiency, or a pituitary disorder, there is no such diabetes present.

The cirrhotic feature of this case brings up some interesting speculations. Since the earliest lesion in portal cirrhosis with fat infiltration is an anoxia of the hepatic cells, and anoxia is thought to produce the fat infiltration, one wonders what would be the effect of such a respiratory enzyme as cytochrome C administration early in such cases. We know the effect on fat transport out of the liver of methionine and the liable methyl group derived from it and from choline. Of course, these agents would not be expected to affect the tumor, but what might they have done in relieving the onset of cirrhosis?

Dr. Delp: There is a school of thought among students of carbohydrate metabolism which assumes the presence of a hepatic factor in every case of diabetes and they indeed refer to hepatic diabetes. Dr. Wheeler, assuming this patient died of hepatic insufficiency, would you alter your therapy if you had it to do over again and what index of improvement would you use?

Dr. Wheeler: If there is any index, it would be the albumin deficiency. Unfortunately, serum albumin restitution is expensive. I would have used more but for that and considering that only one unit was available.

Dr. Delp: Should we have had a punch biopsy of the liver?

Dr. Wheeler: It would have been a useful thing to have done, diagnostically, considering Dr. Statland's 33 per cent success in hitting tumors of the liver with a punch. But it would have had no therapeutic value.

Question: What did the pancreas look like?

Dr. Boley: The pancreas was normal, weight 175 grams, with no fibrosis nor variation of the islet cells.

Dr. Stowell: Although we don't have time to go into it, there is a juvenile atypical picture in addition to the typical picture of cancer of the liver.

Summary

A less common type of neoplasm is represented in this presentation. It is unique because of origin

within an organ the site of a long existing inflammatory process. Dr. Stowell has alluded to the interesting conjectural possibilities in the pathogenesis of primary hepatoma. The clinician's problem is obviously confounded in a picture seemingly that of inflammatory disease only, but in reality also neoplastic. The terminal features of the case were clearly those of progressive hepatic insufficiency, and eventual hepatic coma.

Annual Meeting, May 9-12, 1949

Plans are rapidly being completed for the 90th annual session of the Kansas Medical Society to be held at Topeka, May 9-12, 1949. All scientific sessions, scientific and commercial exhibits, and movies will be at the Topeka Municipal Auditorium, Eighth and Quincy Streets.

The usual outline for the program will be followed. On Monday, May 9, there will be the customary golf tournament and trap shoot, with a banquet for the sportsmen that evening. Scientific sessions will begin on Tuesday morning, continuing through Thursday afternoon. The annual banquet will be held at the Topeka High School cafeteria on Wednesday evening, with special recognition for all past presidents of the Kansas Medical Society. On Tuesday evening there will be a banquet for alumni of the University of Kansas School of Medicine.

A number of well known speakers will take part in the scientific program. Two speakers who have been invited to present papers have not yet replied to the invitations sent them, but the following physicians have sent acceptances to Dr. Orville R. Clark, chairman of the Committee on Scientific Program, and Dr. Byron J. Ashley, chairman of the Committee on E.E.N.T. Program:

Robert J. Crossen, M.D., St. Louis, Missouri—Obstetrics and Gynecology.

Walter A. Fansler, M.D., Minneapolis, Minnesota—Proctology.

William D. Gill, M.D., San Antonio, Texas—Otology, Laryngology, Rhinology.

Thomas T. Mackie, M.D., Winston-Salem, North Carolina—Internal Medicine.

Paul A. O'Leary, M.D., Rochester, Minnesota—Dermatology.

Karl H. Pfuetze, M.D., Cannon Falls, Minnesota—Tuberculosis.

Joseph H. Pratt, M.D., Rochester, Minnesota—Surgery.

Henry K. Ransom, M.D., Ann Arbor, Michigan—Surgery.

C. Wilbur Rucker, M.D., Rochester, Minnesota—Ophthalmology.

W. A. Sodeman, M.D., New Orleans, Louisiana—Internal Medicine.

The complete program will be published in the April issue of the Journal.

REFRESHER COURSE IN GENERAL SURGERY

April 25, 26, 27, 1949

UNIVERSITY OF KANSAS MEDICAL CENTER, KANSAS CITY, KANSAS

FACULTY

Guest Instructors:

WAYNE C. BARTLETT, M.D., Chief of Surgical Section, Wichita Clinic, Wichita, Kansas.
 GUY A. CALDWELL, M.D., Chief of Orthopedic Section, Ochsner Clinic, New Orleans, Louisiana.
 REED M. NESBIT, M.D., Professor of Urology, University of Michigan School of Medicine, Ann Arbor, Michigan.
 DALLAS B. PHEMISTER, M.D., Professor of Surgery, University of Chicago School of Medicine, Chicago, Illinois.

University of Kansas Faculty:

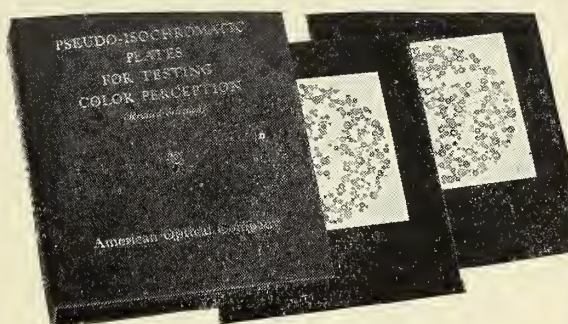
MAX S. ALLEN, M.D., Assistant Professor of Medicine.
 DONALD F. COBURN, M.D., Associate in Neurosurgery.
 LAWRENCE P. ENGEL, M.D., Associate Professor of Surgery.
 GRETCHEN GUERNSEY, M.D., Associate in Anesthesiology.
 PAUL H. LORHAN, M.D., Associate Professor of Anesthesiology.
 THOMAS G. ORR, M.D., Professor of Surgery.
 DAVID W. ROBINSON, M.D., Assistant Professor of Surgery and Oncology.
 MERVIN J. RUMOLD, M.D., Associate in Surgery.
 PAUL W. SCHAFER, M.D., Associate Professor of Surgery.
 FRANK R. TEACHENOR, M.D., Clinical Professor of Surgery (Neurosurgery).
 GALEN M. TICE, M.D., Professor of Surgery (Urology).
 JAMES B. WEAVER, M.D., Clinical Professor of Orthopedic Surgery.
 WILLIAM P. WILLIAMSON, M.D., Associate in Neurosurgery.

SUBJECTS TO BE DISCUSSED

Postoperative Complications of Gall Bladder Surgery.
 New Developments in Surgery of the Colon.
 The Rationale of Regional Lymph Node Dissection.
 Circulatory Complications of Traumatic Injuries of the Extremities.
 Pulmonary Complications Following Surgery.
 The Treatment of Hydrocephalus.
 The Diagnosis and Treatment of Low Back Injuries.
 Some Problems in the Diagnosis and Treatment of Stomach Lesions.
 Ureteral Sigmoid Anastomosis by Direct Elliptical Connection.
 Bone Tumors.
 The Use of Homogenous Bone.
 Some Pitfalls in the Diagnosis of Intermittent Hydronephrosis.
 Shock.
 Regional Enteritis.
 Asymptomatic or Minimally Symptomatic Radiographic Densities of the Chest.
 Operative Clinics—General Surgery, Thoracic Surgery, Orthopedic Surgery, Neurosurgery, Plastic Surgery and Urology.

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COMPANY

COUNTY SOCIETIES

A meeting of the Smith County Medical Society was held January 18 at the home of Dr. Victor E. Watts, Smith Center, and the following officers were elected: president, Dr. B. Hartman, Kensington; secretary, Dr. Watts; delegate to state meetings, Dr. John Lathrop, Smith Center.

* * *

Dr. Robert L. Stevens was elected president of the Anderson County Society at a meeting held at Garnett January 20. Dr. A. J. Turner was named vice president, and Dr. Ralph E. White was selected to be secretary-treasurer. Delegates are Dr. White and Dr. C. B. Harris, Jr.

* * *

The Franklin County Society entertained the Auxiliary and the Miami County Medical Society and its Auxiliary at a dinner meeting at the Ottawa Country Club January 26. Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, was guest speaker.

* * *

Two physicians from Goessel, Dr. A. K. Ratzlaff and Dr. E. S. Rich, presented a scientific program before the Marion County Society at a meeting held February 2 at Marion. Dr. Ratzlaff spoke on "The Use of Saline in the Rubin Test for Tubal Patency," and Dr. Rich discussed "The Diagnosis and Treatment of Infertility."

* * *

The Labette County Society endorsed the Red Cross blood program in the county at a meeting held at Parsons January 26. Plans were made for members to assist in the blood donor program.

* * *

A meeting of the Miami County Society was held at Paola January 28. Dr. Damon Walthall, Kansas City, spoke on pediatrics and Dr. Philip L. Byers, Kansas City, presented a discussion on cardiac diseases.

* * *

The Sedgwick County Society, in cooperation with the Veterans Administration Hospital at Wichita, presented a clinical conference at the hospital February 18 and 19.

* * *

The following officers were elected to serve the Rice County Society at a meeting held at Lyons January 26: president, Dr. R. Leonard; treasurer, Dr. George Gill. For the scientific program three medical films were shown, "Pulmonary Lobectomy," "Intravenous Anesthesia," and "Medical Service in the Invasion of Normandy."

Dr. J. R. Prichard was re-elected president of the Bourbon County Society for 1949, and Dr. Leland P. Randles was named to serve again as secretary-treasurer of the group.

* * *

Dr. R. Bruce McVey was installed as president of the Clay County Society at a meeting held at Clay Center in January. Dr. L. D. Bowles of Clifton is serving as secretary.

* * *

The Nemaha County Society met in January in Seneca and elected the following officers: president, Dr. Conrad M. Barnes; vice president, Dr. R. E. Capsey; secretary, Dr. Edward A. Stapleton, Jr.

* * *

Dr. Vincent T. Williams of Kansas City, editor of the Jackson County Medical Bulletin, was guest speaker at a meeting of the Shawnee County Society held February 7 at Topeka. He spoke on medical economics and medical legislation.

* * *

Dr. J. G. Conley was elected president of the Crawford County Society at a meeting held February 3 at Pittsburg. Dr. W. G. Rinehart was named vice president and Dr. J. D. Pettet, secretary.

* * *

The Pawnee County Society has named the following officers for 1949: president, Dr. S. T. Coughlin; vice president, Dr. T. R. Fraser; secretary, Dr. O. R. Cram.

Average Age of Physicians

The average age of physicians in the United States is slightly less today than it was at the outbreak of World War II, according to a report issued last month by the Bureau of Medical Economic Research of the American Medical Association. The statistics include interns, residents and doctors not in active practice and reflect the relatively large number of physicians trained since 1940.

The median age of the doctors of the nation is 44.4 years, compared to 45.8 years in 1940. For Kansas the median is 46.6 years. The percentage of all physicians under 50 years rose from 57.5 in 1940 to 60.2 in 1948. In the age group 35 to 49 the percentage rose from 31.4 to 36.5.

AO Consultant to Navy

Dr. Paul Boeder, director of American Optical Company's Bureau of Visual Science, has accepted an invitation from the Office of Naval Research to act as principal consultant on a Navy-sponsored research project in the field of spatial perception. Dr. Boeder will collaborate with a number of research scientists at Columbia University.

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Conference of County Society Officers

The second annual conference of officers of the component county organizations that make up the Kansas Medical Society was held at the Jayhawk Hotel, Topeka, on Sunday February 6, 1949. Although icy highways prevented many who had planned to attend from doing so, all sections of the state were represented. Also present were a number of officers and councilors of the Society and the chairmen of various committees.

The meeting was opened by Dr. O. W. Davidson, president, who explained that many physicians who had attended the first such conference last September had asked the Society to repeat the program for the benefit of new officers. At their suggestion a date was chosen early in the year, shortly after new officers were installed, so that they might have the benefit of the instructions throughout their terms of office.

Dr. Davidson introduced Miss Marian Cook, who is in charge of membership records at the Society office. She displayed samples of alphabetical and county records maintained in the office and asked the co-operation of county secretaries in furnishing complete information on new members and adequate details in reporting dues and assessments, honorary memberships, and service memberships.

Dr. J. L. Lattimore, treasurer, reported briefly on the expenditure of Society funds, and then told of bills pending in the Kansas legislature in which the profession is interested, those pertaining to rural health, social welfare, adoptions, autopsies, deduction of medical expenses from state income tax, hospital districts, logopedics, and vital statistics.

Luncheon was served to the group at noon, and a number of guests, senators and representatives in the Kansas legislature, were present. Dr. Lattimore, who is also a member of the legislature, introduced the guests.

The afternoon program was opened by speakers from two allied organizations. Mrs. Charles H. Miller, president-elect of the Woman's Auxiliary to the Kansas Medical Society, and Mrs. Clyde D. Blake, president, told of the work of the Auxiliary and solicited the support of all physicians in increasing Auxiliary membership. Miss Regina Lewis, president of the Kansas Medical Assistants' Society, reported a membership of 478 in that group and outlined their objects.

Dr. L. S. Nelson spoke briefly on public health problems, the Kansas State Board of Health, and its budget.

A discussion of medical public relations was introduced by Mr. Oliver E. Ebel, executive secretary,

who outlined a positive program to demonstrate to the people of Kansas that the profession in this state is interested primarily in providing good medical care for all. Then followed a report on the Society's biggest public service project, Kansas Physicians' Service, by Dr. Conrad M. Barnes, president of that group. He introduced Mr. Proctor Redd, director of physician-hospital relations for Blue Shield. Mr. Redd spoke on Blue Shield as a public relations medium.

Dr. F. R. Croson, first vice president of the Society, told of plans for the construction of a Union Building on the campus of the University of Kansas School of Medicine and announced that the Society will soon begin a campaign to solicit \$50,000, through contributions from individual physicians, to be used for that building.

Dr. Davidson concluded the outlined program with a report on Society activities and plans for the annual meeting, May 9-12, 1949, at which time special recognition will be given all past presidents. He invited questions from the floor, and a number of subjects were discussed, the A.M.A. assessment, Blue Shield, medical care for veterans, pending legislation, and licensure of physicians from foreign countries.

Cancer Film Available

A new medical film, "Cancer: The Problem of Early Diagnosis," is now available for showing at medical society meetings, according to announcement made recently by Dr. Orville R. Clark, chairman of the Kansas Medical Society's Committee on Control of Cancer and chairman of the Professional Education Committee of the Kansas Division, American Cancer Society. The film is the first of six motion pictures being produced over a two-year period.

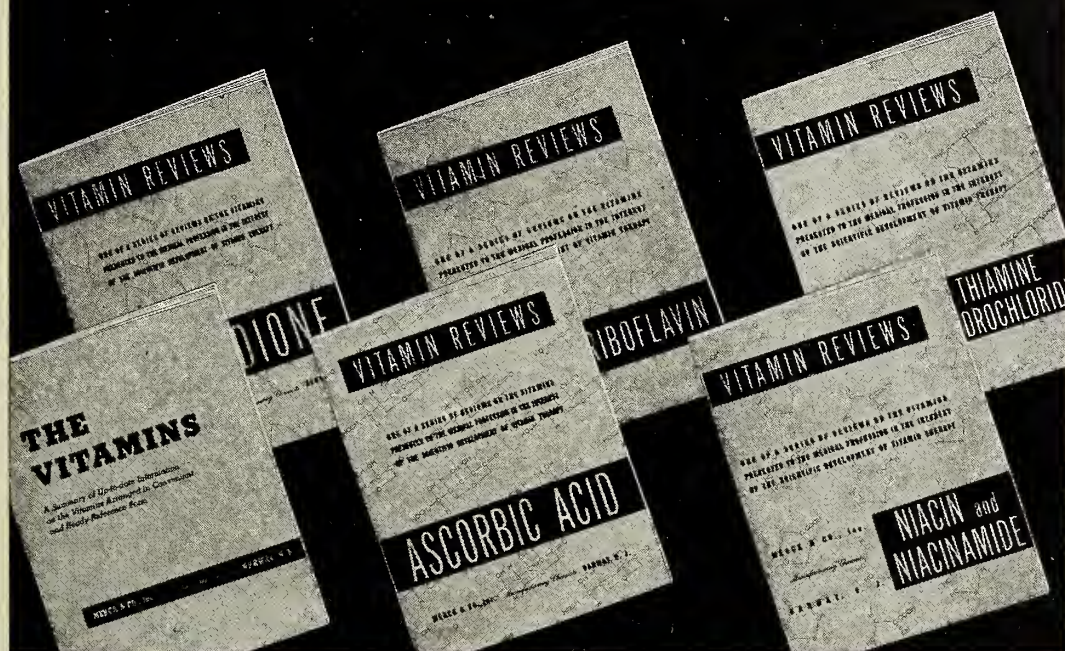
The film combines modern cancer surgery with animated charts and a historical sequence showing statistics on sites of cancer. Shots of cancer operations are reproduced on the color screen with a detail that was considered unusual when the picture was shown for the first time at a preview in New York in January.

Other films in the series will teach the techniques of early diagnosis of breast, intra-oral, lung and esophageal, gastro-intestinal and skin cancer.

Produced by Audio Productions, in New York City, the picture is a 16-millimeter sound film. It will be distributed by both the National Cancer Institute and the American Cancer Society. Local requests may be referred to the Kansas Division, American Cancer Society, 506 New England Building, Topeka, Kansas.

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ACTIVITIES OF MEMBERS

Dr. D. R. Bedford, Topeka, recently took the examinations of the American Board of Internal Medicine and is now a diplomate of the board.

* * *

Dr. Hugh A. Hope, Hunter, discussed health problems before a meeting of the Mitchell County Teachers' Association at Beloit February 5.

* * *

Dr. F. C. Beelman, Topeka, secretary of the Kansas State Board of Health, was in Washington, D. C., last month to attend the first meeting of the National Committee on Vital and Health Statistics. He was named a member of the committee by the Surgeon General of the Army when the State Department called for the establishment of such a body.

* * *

Dr. Andre Baude, formerly with the Kansas State Board of Health, is now engaged in private practice in Topeka. Dr. F. K. Albrecht, formerly medical editor for the Williams and Wilkins Publishing Company, succeeds Dr. Baude with the Board and is director of the Division of Tuberculosis Control.

* * *

Dr. Saul Zizmor, Chetopa, spoke on "Trends in Modern Medicine," at a meeting of the Home Culture Club of Chetopa February 1.

* * *

Dr. Fred F. Dozier, Herington, has been appointed health officer of Dickinson County. Dr. F. E. Richmond, Stockton, has been named to serve Rooks County in the same capacity, and Dr. D. C. McCarty, Medicine Lodge, will serve as health officer in Bourbon County.

* * *

Dr. R. G. Powell, Galena, addressed the Lions Club there on February 1 on the work being done by the American Heart Association. The club voted to assist in the drive for funds for the association.

* * *

A discussion of socialized medicine was presented to the Rotary Club of Pratt recently by Dr. M. E. Christmann of that city.

Preventive medicine requires not only the cooperation, consent, and understanding of the individual who is to be benefited; oftentimes he must take the initiative—he must realize that it is just as important to seek advice from his physician on how to keep well as it is to call the physician for help when illness strikes.—Med. in the Changing Order, Rep. N. Y. Acad. Med. Comm., Commonwealth Fund, 1947.

DEATH NOTICES

AUGUST PAUL FLECKENSTEIN, M.D.

Dr. A. P. Fleckenstein, 71, an active member of the Northwest Kansas Medical Society, died at his home at Selden January 28. He was graduated from the Kansas City College of Medicine and Surgery in 1916 and began practice in Kansas immediately, opening an office at Herndon. In 1942 he moved to Selden. At the time of his death he was serving as county health officer and was a member of the staff of the Thomas County Hospital. Among the survivors is a son, Dr. Charles S. Fleckenstein, who is also a member of the Kansas Medical Society.

* * *

EUGENE MAXIMILIAN WIEDENMANN, M.D.

Dr. E. M. Wiedenmann, 59, assistant superintendent at the Topeka State Hospital for the past 11 years, died January 29 after a month's illness. He was born in Germany and received his medical education there, graduating from the University of Freiburg. During World War I he was a medical officer in the Germany army, and after the war he engaged in private practice in Mexico City. He came to this country in 1928 and became a citizen in 1937. He was an active member of the Shawnee County Medical Society.

* * *

CHARLES HARRY MIELKE, M.D.

Dr. C. H. Mielke, 75, an honorary member of the Wyandotte County Society, died January 30 at his home in Kansas City. He was born in Berlin but came to this country before studying medicine. He was graduated from the College of Physicians and Surgeons in 1900 and began practice in Kansas City the following year. During World War I he served with the medical corps and received an injury to his eyes which later resulted in poor vision and forced his retirement from practice about ten years ago.

* * *

JAMES GILMER SANDIDGE, M.D.

Dr. J. G. Sandidge, 78, died at his home at Mulberry February 6 after an illness of several months. A graduate of the Missouri Medical College, St. Louis, in 1893, he received his Kansas license in 1901 and had practiced in Mulberry since that time. He was an honorary member of the Crawford County Society.



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ABSTRACTS FROM CURRENT LITERATURE

Pediatric Respiratory Tract Infections

Common Respiratory Tract Infections in Infants and Children. By John M. Adams, *Jnl. Ped.*, 33:499-505, October 1948.

Adams, in a partial review of the work of the Commission on Acute Respiratory Diseases, points out that a "spectrum" of respiratory illnesses, probably of virus origin, emerges after the exclusion of infections of known cause (i.e. tuberculosis, diphtheria, beta hemolytic streptococcus infections, influenza, and psittacosis). The Commission has been able to separate four groups, all of which fuse with each other, but which present different clinical features and presumably are caused by different etiologic agents. These are:

1. The "common cold."
2. "Acute respiratory diseases." (ARD)
3. Nonbacterial exudative pharyngitis and tonsillitis.
4. Primary atypical pneumonia.

The author believes that a fifth, primary pneumonitis, might properly be added to this list.

He states that the first cold of the normal full-term newborn is usually a mild, almost afebrile, coryzal infection with an incubation period of 1-2 days, minimal physical findings, and an almost normal white count. "Acute respiratory disease," though difficult to delineate sharply, usually appears as a more febrile illness, later in infancy, with a 5-6 day incubation period. It may be followed by secondary bacterial infections such as otitis media and cervical adenitis. *Non-bacterial exudative pharyngitis and tonsillitis* makes its first appearance at about one year of age, is a severe illness showing an abrupt onset with high fever, sometimes accompanied by convulsions. There is a moderate swelling of the pharyngeal lymphoid tissue, with a grey or whitish, discrete, exudate appearing after 12-18 hours. The course is self-limited to 3-4 days; complications are rare. The author states that this type of infection is more common than streptococcal pharyngitis, which produces a more confluent exudate, more edema and redness, and usually cervical adenitis. *Primary atypical pneumonia* parallels the adult disease, is usually milder, with x-ray findings out of proportion to signs and symptoms. *Primary pneumonitis* most frequently occurs as an epidemic disease in institutions, shows a wide range of involvement. Cough, dyspnea, and cyanosis, are prominent in severe cases. X-ray of the lungs shows diffused shadows, bronchial in distribution and usually widespread.

Influenza produced by the A virus may mimic any

of the above. Most characteristically, there is acute pharyngitis with a mononuclear exudate.

Under the heading of treatment, Adams stresses the fact that cough is an effective defense mechanism against secondary pulmonary infection, and should not be interfered with unless the child's rest is seriously disturbed (as in measles and pertussis). He summarizes therapeutic measures as (1) postural drainage in the prone position to prevent bacterial pneumonias, especially in infants (2) "good hygiene and common sense" in the self-limited infections for which no drug is effective (3) penicillin, sulfonamides, or streptomycin for secondary bacterial infections and (4) prevention by reducing the amount of exposure.—G.M.M.

* * *

Infectious Croup

Infectious Croup: Etiology. By E. F. Rabe, *Jnl. Ped.*, 2:255-265, September 1948.

This paper deals with a series of 347 cases of infectious croup admitted to the New Haven Hospital during the ten-year period 1937-1946. Patients were divided into one of three groups on admission, depending on evidence of downward progression of the disease. Those with upper respiratory tract obstruction and a hoarse voice with brassy cough were classed as laryngitis. Children with the above symptoms and in addition loud moist rales presumably originating in the trachea or upper bronchi were called laryngotracheitis. If, in addition to the above, patchy areas of fine bubbling or sibilant rales were found, the child was classified as laryngotracheopneumonitis.

In 22 cases, the etiologic agent was considered to be *C. diphtheriae*. In all of these, throat cultures grew out virulent diphtheria bacilli; in four out of the five deaths, post mortem cultures of the heart blood were made and all were positive. Three of these showed a pneumococcal bacteremia as well.

Twenty-eight cases were considered to be due to *Hemophilus influenzae* type B. Of these, 96.4 per cent had *H. influenzae* in the nasopharynx on admission, and 89.2 per cent had positive blood cultures (one or the other was positive on all the cases). The nose and throat cultures also showed a slightly greater than normal incidence of pneumococci (39 per cent) and a normal incidence of streptococci (8.8 per cent).

In the remaining 297 cases, the etiologic agent was less clear cut. The author classes these as "virus" croup on inferential and clinical grounds. Their clinical courses were so similar that a common single causative agent could be assumed. The bacteriologic findings from the nose and throat cultures (*H. influenzae* 42.2 per cent, *H. strep.* 8.8 per cent, and pneumococci 52.2 per cent) were not significantly different statistically from those of a



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1. Follis, R. H., Jackson, D., Eliot, M. M., and Park, E. A.: *Am. Jour. Dis. Child.*, 66:1, July, 1943.

2. Stearns, G.: *Jour. Lancet*, 63:344, Nov., 1943.

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very large group of "normal" patients suffering from non-infectious diseases (*H. influenza* 32.8 per cent, *H. strep.* 10.0 per cent, pneumococci 33.8 per cent. Only one positive blood culture (for pneumococcus) was found in the entire group. The serological types of the pneumococcus found did not correspond with the usual types causing pneumococcal disease in children. In the extremely severe cases which required tracheotomy, no single type of bacteria was found frequently enough to justify regarding it as the etiologic agent.

The correlation between the findings from nasopharyngeal cultures on admission, and later cultures from the larynx, trachea, and bronchi, proved to be very good. It was felt that the division of cases into laryngitis, laryngotracheitis, and laryngotracheopneumonitis was valuable from the standpoint of prognosis, but had no etiologic significance.—*G.M.M.*

To Demonstrate Color Television

Television in natural color for the teaching of surgery and medicine will have a pioneering demonstration at the annual meeting of the American Medical Association in Atlantic City in June, under arrangements recently concluded by Smith, Kline and French Laboratories and the University of Pennsylvania.

The sponsoring laboratories arranged for the development and manufacture of the color television equipment as a contribution to the advancement of medical teaching. To assure the suitability of the equipment for widespread use in medical schools under general teaching conditions the Medical School of the University of Pennsylvania is collaborating with the engineering research laboratories of the Columbia Broadcasting System in its design. Cooperating with CBS in the production of the equipment are Zenith Radio Corporation and Webster-Chicago Corporation.

For four days at the time of the A.M.A. meeting, actual surgery and diagnostic and other medical procedures will be televised in natural color while being performed by the faculty of the Medical School of the University of Pennsylvania and by the staff of the Atlantic City Hospital. The color television picture will be picked up at the hospital and beamed on a closed circuit direct to Convention Hall, where doctors will watch the transmissions on 20 color television receivers.

After the A.M.A. meeting, Smith, Kline and French Laboratories will conduct similar demonstrations at major medical meetings elsewhere to acquaint physicians throughout the country with the potentialities of this new teaching medium. It will enable large groups of medical students to study

close up details of surgical techniques and medical procedures which now can be viewed by only a few at a time.

Congress on Obstetrics and Gynecology

The International and Fourth American Congress on Obstetrics and Gynecology will be held at the Hotel Statler, New York City, May 14-19, 1950, according to a recent announcement by the sponsoring group, the American Committee on Maternal Welfare. Five topics will be discussed in the scientific programs: physiology of human reproduction, pathology of human reproduction, social and economic problems, neoplastic diseases of the female reproductive system, and obstetric and gynecologic procedures. There will be numerous scientific and technical exhibits.

Inquiries on the congress should be addressed to Fred L. Adair, M.D., 24 West Ohio Street, Chicago 10, Illinois.

Fellowships Through National Foundation

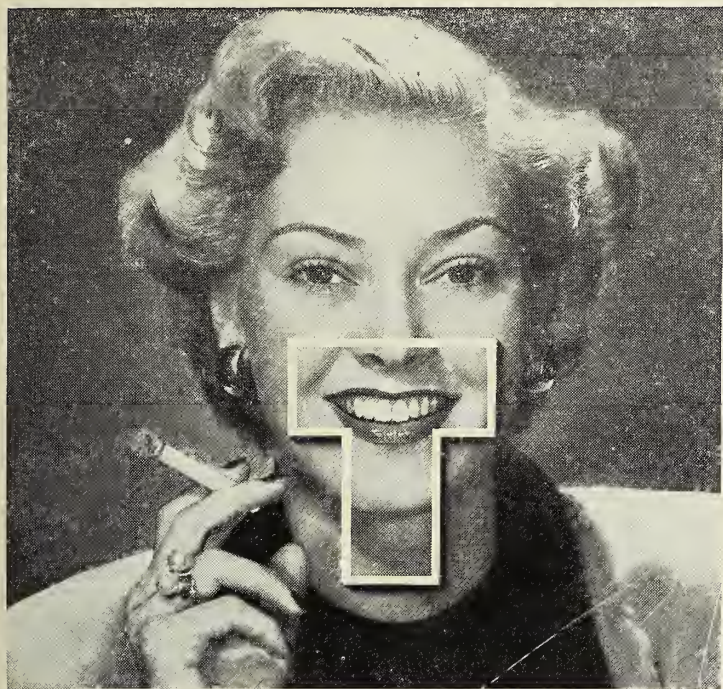
A number of research and clinical fellowships are now available to physicians through the National Foundation for Infantile Paralysis, according to a recent press release from the foundation. Applications may be made to the foundation, 120 Broadway, New York 5, New York, at any time during the year. Selection of candidates will be made by committees composed of specialists in each field, and awards will be based on the individual needs of each applicant.

Research fellowships are available in virology, orthopedic surgery, pediatrics, epidemiology and neurology. They will emphasize advanced training in the basic sciences as they apply to the particular specialty and to research and experience in research, which need not be immediately related to poliomyelitis.

Clinical fellowships are available to physicians who wish to prepare for eligibility for certification by the American Board of Physical Medicine. Public health fellowships, providing for one year of postgraduate study leading to a Master of Public Health degree, are also available.

The A.M.A. committee now studying the nursing problem in the United States reports that there are now about 342,737 available nurses. It is indicated that 550,000 nurses will be required to care for the American people in 1960 if current standards are maintained. To accomplish this, 50,000 nurses must be graduated each year from 1951 to 1960. The largest number ever graduated was 44,700 in 1947.

How mild can a cigarette be?



In a recent coast-to-coast test, hundreds of men and women smoked Camels—and only Camels—for 30 consecutive days. These people smoked on the average of one to two packages of Camels a day during the entire test period. Each week, throat specialists examined these Camel smokers. A total of 2,470 careful examinations were made by these doctors. After studying the results of the weekly examinations, these throat specialists reported:

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THE KANSAS PRESS LOOKS AT MEDICINE

For this section of the Journal the Editorial Board selects representative opinions from the press. These are presented to give the medical profession a review of current editorial expression and include opinions that are both favorable and unfavorable to medicine. The Editorial Board would appreciate hearing from the membership regarding selection of material for this column.

"Doing Time"

Doctors should have more consideration for their patients—not that this is any criticism of their standards and ability, for it isn't after the doctor takes professional charge of the patient whereof we speak, but rather during that timeless interim spent writhing in an anteroom chair waiting a turn.

If all the hours that have been idled away waiting on the doctor were added up and laid end to end they would not reach from here to there and back but there would be a couple of laps left over. And it seems to be that way in every physician's office. There may be men of medicine who don't have more cases than they can comfortably handle, but their species seem rare enough to be apt subjects for a medical journal.

If the patient's suspected ailment is anything aggravated by irritation he is sure to be fit material for the doctor by the time he has sweated out his waiting period, if not before. An incipient ulcer, high blood pressure or just plain "nerves," will get a first class boost when a 2:30 o'clock appointment drags along until well past four.

The patient, knowing full well that if he is late he will miss his turn, drops everything of the day's work and manages to hit 2:30 on the noggin, only to fritter away a couple of hours—often the minimum, it seems—before he has an opportunity to state his ills personally. In that interval he has not only scrutinized the overhead lighting fixtures, the rug pattern, his watch innumerable times, the dirt under his nails, an ancient copy of Hygeia and the office nurse (not necessarily in that order of course), but has also fine-tooth-combed magazines of such outmoded stature that he fully expects to see a picture of Warren G. Harding in inaugural dress jump out on the turn of the next page.

Granted, doctors are very busy people and they often run a patient through the mill and out again before he has time to learn to say neurocirculatory-asthenia in order to wade through the remainder of the day's clients and get home for a cold supper. But they can only take care of so many patients per day and surely they would be doing themselves a favor

as well as the guy who pays the bill if they worked out a more prompt schedule system.

Even though a case frequently takes more time than was first anticipated, it seems unnecessary to have patients stacked up a dozen deep day after day. Just as many patients could be accommodated if each could utilize that interminable waiting period at his own affairs before coming to the office, then could get in and out and be gone when his turn did come.

Besides the office girl could toss out all those old magazines for lack of reluctant readers.—*Salina Journal*, November 24, 1948.

* * *

State Medicine

A recent survey of physicians showed a large majority in favor of a crusade against proposed federal health insurance legislation. They were opposed to such an extent they were willing to subscribe to a large fund to fight any such laws.

An eastern reporter recently investigated medical conditions in England where socialized medicine has been in force for some time and the facts brought out were startling.

Socialized, or free medicine and medical care, was one of the reforms demanded by the present English labor government. That its actual workability is far from assured, is evident from conditions now found there.

First of all, as in this country, there was already a shortage of doctors and nurses. The chance to get something "free" has made the present task almost impossible. Changing the profession from one of service ideals and ethical standards to one of mass administration has already lessened the desire for newcomers to enter the field of medicine.

Red tape and standardized procedure has almost eliminated individual care and attention. The doctor must spend as much or more time writing reports than he does with his patients, although one English doctor reported he saw 120 patients and made 25 calls a day. That was an average of two a minute. No time there for much personal research or care.

Whereas formerly a doctor's dealing with a patient was personal and confidential, every detail of interview and treatment is subject to public inspection. Patients have to wait in line for hours. Hospitals have long waiting lists, and chronic cases, borderline cases, and the aged must be passed over quickly. One English hospital had a waiting list of over 1800.

Obviously, whether they need attention or not, patients are getting sub-standard medical care and no one has yet come up with the answer to correct



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Canned milk first became prominent in civil war days. About the same time, 1865, Charles A. Page, while U. S. consul at Zurich, Switzerland, envisioned what the fixed qualities of canned milk could contribute to health improvement, the world over. He staked his future on his conviction.

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the condition. As long as people can get something for nothing they are going to get it. Those who need it must sacrifice some attention to those who are just taking advantage of it.

And yet some of them like it. They, the people own the service and one riveter actually told an eminent surgeon who was prescribing for him, "You must do as I say—you doctors are working for me now."

It is no wonder the American doctors are worried about the prospects of such an innovation in this country. It seems that some people think they know more about medical practice than the experts, the doctors. If it doesn't work with austere and liberal minded Englishmen, how can it be expected to work here?—*Leavenworth Times*, December 16, 1948.

* * *

AMA's Negativism

The American Medical Association has authorized a 3½ million dollar fund to fight compulsory national medical insurance, which is certainly within its rights but also an indication that the powerful organization is not in tune with the temper of the times.

There is a lot to be said on either side of the compulsory insurance question. It is evident, however, that the great bulk of the citizenry is interested in some kind of a plan which will ease the burden of serious illness upon the family budget.

That the AMA refuses to recognize. Almost at the same time it approved a big war chest for the battle against compulsory medical plans, it refused to support the Blue Cross and Blue Shield programs of voluntary insurance on a national scale. Instead it proposes to concentrate on selling the "advantages of the American system in securing a wide distribution of a high quality of medical care." That will hardly replace the dents created in the individual's pocketbook by extended sickness, however generally recognized are the wonders of American medical science.

In short, the AMA to stave off compulsory action fostered by the federal government must come up with something besides a negative program. It is combating an irresistible urge for greater security upon the part of the individual citizen—security against poverty in old age, security against interruptions in weekly income, security against dislocation of the family's budget through unexpected though necessary expenditures, and the like. The urge won't be conquered by attempting to maintain the status quo, because the present social order is dedicated to attainment of that desired goal of greater security.

In this case, the AMA's best defense of organized medicine would be a good offense. Its steadfast re-

fusal to sponsor, or endorse, a national plan of voluntary hospital and medical insurance or something similar can only lead to what the medical profession fears most.—*Parsons Sun*, December 4, 1948.

* * *

Substandard Medicine

Among the many interpretations of the Truman election victory is the belief it means some kind of socialized medicine for this country. Last week a survey of physicians in Kansas City showed a large majority in favor of a crusade against proposed federal health insurance legislation. The majority was willing to contribute to a fund being sought by the American Medical Association at \$25 a member to fight any federal law. They warn strongly against it as being costly, socialistic, full of red tape, freedom-depriving to health seekers and a dire un-American prospect.

Perhaps American doctors are alarmed by a recent warning from Britain. A distinguished American physician observed, at first hand, what is happening in medical practice in England under the Labor government's act giving "free" service. He pointed out that the act did not create a single extra doctor, nurse, hospital bed or any other facility. But the demand for the allegedly "free" service has been enormous. British doctors must see an average of 100 patients a day. As a consequence, this observer reported, such "overloading has made it necessary for the physician to shy away from the chronically ill, the aged, the children, the pre-tubercular, and the border line mental case in filling his panel. The vast amount of unnecessary medical care is crowding out the very group that the plan was touted as serving."

Finally, this American physician found that the quality of practice is declining in other ways as well. Services which the American people regard as routine—such as obstetrical and dental anesthesia—are not considered necessary and are not covered by the British act.

All of which probably proves that government-controlled medicine is substandard medicine, no matter where it is tried. But despite the efforts of the A.M.A. in the United States, it may well be tried here. Some doctors see as inevitable the trend toward nationalization of health service. Protests of other groups in other years failed to stop laws for tariffs, farm crop subsidies, unemployment insurance, school lunches and many other semi-socialistic movements. Nonetheless the American Medical Association is going to make it a crusade. When the new Congress opens its debate on the health insurance bill, with the blessing of President Truman, the country may expect to see a drawn-out battle.

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and surgical services by pre-payment, or of commercial insurance for such use, may prove to be the right way to accomplish the purpose. If socialized medicine fails to work in England, with all the British austerity and liberal leanings, the chances are against it in this country.—E. T. L. in *Emporia Gazette*, December 13, 1948.

BOOK REVIEWS

Anesthesia: Principles and Practice. By Alice M. Hunt, R.N. Published by G. P. Putnam's Sons, New York City. 148 pages. Price \$2.60.

The author has presented a brief and concise outline on the principles of anesthesia. It is recommended that the physician and nurse particularly read Chapter Five on immediate preoperative care as it will explain the care of the patient by the nurse. This particular aspect has heretofore not been stressed as much as it should be. Further, the author, under method of anesthesia, includes intravenous and rectal methods as a form of general anesthesia. It is wrong to consider an intravenous anesthetic as a general or peripheral depressant. Intravenous anesthetics are central depressants.

As an outline for physicians the book may have no appeal. It is recommended for all nurses as a manual for understanding the fundamental principles of anesthesia.

The book is concise and well written. The bibliography is fair.—P.H.L.

* * *

Blood Transfusion. By Elmer L. DeGowin, Robert C. Hardin and John D. Alsever. Published by W. B. Saunders Company, Philadelphia. 587 pages, 200 diagrammatic drawings. Price \$9.00.

In recent years there has been a marked increase in the therapeutic use of blood and its derivatives, and a steady increase in the number of blood banks. The authors state that it has been their purpose to include material which is of interest to physicians, medical students and laboratory technicians, and they have succeeded in doing so. The entire field of blood transfusion is covered although the major portion of the text has been devoted to the various aspects of whole blood transfusion. Other subjects

discussed are laboratory procedures, the preparation and administration of plasma, preparation and administration of the blood derivatives and plasma substitutes, transfusion services, and transfusion apparatus. The book is very well written.—S.J.W.

* * *

Clinical Aspects and Treatment of Surgical Infections. By Frank L. Meleney. Published by W. B. Saunders Company, Philadelphia. 840 pages, 287 figures. Price \$12.

This book definitely fills a unique gap in our surgical literature. The author has contributed and collected a large amount of material which will be of practical value in the treatment of patients. He gives a systemic review of the various areas, organs and tissues of the body inflicted with necrotizing and pyogenic organisms which produce the so-called surgical infections. Effort is made to show the close relationship between the pathogenesis of bacterial infections and surgical therapy. From a clinical point of view, the discussions on the indications and contra-indications of the most recent antibiotics as an adjunct to surgical therapy are especially excellent and practical. In the various chapters there are illustrative and complete case histories from which the author draws his conclusions. Complete bibliography follows each chapter.—M.J.R.

* * *

Obstetric Analgesia and Anesthesia. By F. F. Snyder. Published by W. B. Saunders Company, Philadelphia. 401 pages, 114 figures, 18 tables. Price \$6.50.

This is an excellent and critical review of drugs used for obstetrical analgesia and anesthesia with their effect on fetal pulmonary physiology and pathology as well as their effect on labor and the maternal organism. The book summarizes our present-day knowledge on the subject and should be of great interest to obstetricians and all others interested in obstetrical anesthesia.—R.L.N.

* * *

Detailed Atlas of the Head and Neck. By Raymond C. Truex and Carl E. Kellner (artist). Published by Oxford University Press, New York. 162 pages, 147 illustrations.

This volume consists of 147 skillful and artistic drawings of Professor Truex's detailed dissections of

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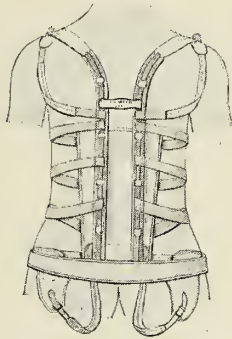
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anatomical configurations of the head and neck. The dissections are arranged and carried out in a unique fashion, making easy for the student a pictorial reconstruction of a given region in a three-dimensional view.

In addition to a series of dissections showing regional anatomy and topographical relationships, there are detailed drawings of the skull and vertebrae, showing attachments of muscles and tendons, a series of frontal sections related to bony landmarks, and a series of transverse sections, also oriented to bony landmarks. Particularly well presented are the series of drawings showing the cranial cavity and its contents. The relation of brain stems, cerebral veins and vessels, to meninges, cranial vault and foramina is displayed clearly in the minutest detail.

No discussion or statement of practical significance or application is made. The drawings are presented in a thorough and artistically clear fashion, giving the student an excellent appraisal of the anatomy of the head and neck.—M.S.

* * *

Essentials of Gynecologic Endocrinology. By Gardner M. Riley. Published by Caduceus Press, Ann Arbor. 205 pages, 31 figures. Price \$3.00.

This book is written in brief form, approaching moderate amplification of an outline. Emphasis is placed on a discussion of the physiology of the endocrine glands and their target organs, along with a discussion of diagnostic methods and a list of endocrine therapeutic agents. As a result, only about 60 of the 200 pages are devoted to clinical problems of an endocrine nature and their specific treatment. Endocrinology of the male is discussed in one chapter. This seems definitely superfluous in a work of this length.

The section on endocrine physiology is clearly written and easily understood. It contains lists of many good references as do all sections of this book. No mention is made of the role of the hypothalamus in endocrine physiology, which constitutes a rather serious lack of completeness.

The section entitled "Clinical" is well written but it seems some parts might be confusing to the uninitiated because so much material is covered in so little space that adequate discussion is almost prohibited.

The section on "Diagnostic Procedures, Sex Hormone Chemistry and Endocrine Preparations" is well

written. It contains a list of many of the commonly used endocrine preparations and detailed instructions for many of the diagnostic procedures employed in endocrinology. Included are directions for the silver carbonate stain for vaginal smears which was developed in the laboratory with which the author is associated.

Whereas this book provides an adequate discussion of the basic essentials of each of the topics, it would seem that its very brevity might create some confusion, particularly for one approaching the subject of endocrinology for the first time. A good understanding of the subject would probably require additional reading, particularly as regards clinical endocrinology. No discussion of endocrinology as it applies to sterility is made in this book specifically.—W.J.D.

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THE JOURNAL *of the* *KANSAS MEDICAL SOCIETY*

Owned and Published by The Kansas Medical Society

Volume L

APRIL, 1949

No. 4

Greetings

The Shawnee County Medical Society is once again pleased to be host to the Kansas Medical Society at its 90th annual session which will be held in Topeka, May 9-12, 1949. We of Topeka are proud that Topeka is frequently chosen as the site of this meeting, and hope we will continue to merit this consideration.

Many of the members of the Shawnee County Medical Society have worked tirelessly for several months in preparation for this meeting and we hope you will be pleased with their results. We feel the scientific program we have arranged is an excellent one, and that it is of sufficient variety so that it should be profitable to all those who attend. The other committees have also been active, and the responses to the solicitations have been good so that we should have a well balanced meeting.

Visitors are welcome to visit the office of the Shawnee County Medical Society at 700 Kansas Avenue, and to avail themselves of the facilities of our offices while visiting in Topeka.

In behalf of the entire membership of the Shawnee County Medical Society, I wish to extend to you a hearty welcome to the 1949 session of the Kansas Medical Society, and I am sure you will derive both pleasure and profit from attending this meeting.

LEO A. SMITH, M.D., President

Shawnee County Medical Society

Guest Speakers

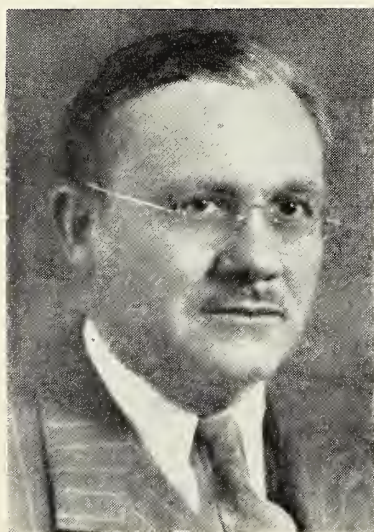


ROBERT JAMES CROSSEN, M.D.

St. Louis, Missouri

Graduate, Washington University Medical School, 1925; Assistant Professor, Clinical Obstetrics and Gynecology, Washington University; Diplomate, American Board of Obstetrics and Gynecology, American Board of Medical Examiners; Fellow, American College of Surgeons; Member, American Radium Society, American Society for the Study of Sterility.

Specialty: Obstetrics and Gynecology.



WALTER A. FANSLER, M.D.

Minneapolis, Minnesota

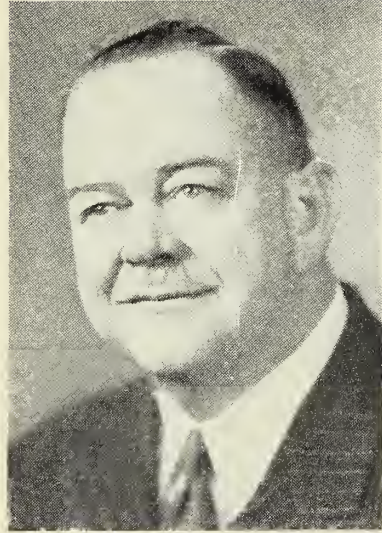
Graduate, Johns Hopkins University, 1914; Clinical Professor of Surgery, University of Minnesota; Head, Division of Proctology, Minneapolis General Hospital; Past Chairman, Section on Gastro-Enterology and Proctology, American Medical Association; Diplomate, American Board of Surgery; Fellow, American College of Surgeons; Fellow and Past President, American Proctologic Society; Member, Editorial Board, Journal-Lancet.

Specialty: Proctology.

WILLIAM DAVIS GILL, M.D.*San Antonio, Texas*

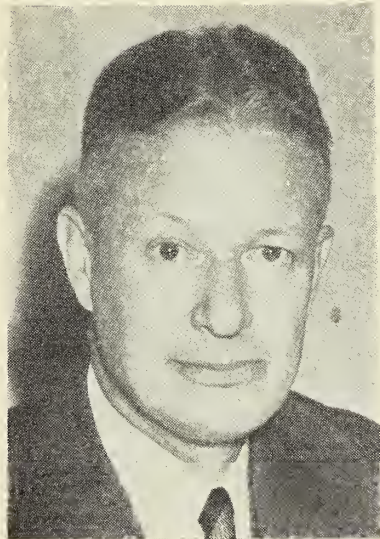
Graduate, Vanderbilt University Medical Department, 1917; Guest Lecturer, U. S. School of Aviation Medicine, Randolph Field, Texas; Diplomate, American Board of Otolaryngology, American Board of Ophthalmology; Fellow, American College of Surgeons; Member, American Academy of Ophthalmology and Otolaryngology, American Laryngological, Rhinological and Otolaryngological Society.

Specialty: Otolaryngology, Ophthalmology.

**THOMAS TURLAY MACKIE, M.D.***Winston-Salem, North Carolina*

Graduate, Columbia University, 1924; Professor of Preventive Medicine, Bowman Gray School of Medicine of Wake Forest College; Director, Institute of Tropical Medicine of Bowman Gray School of Medicine; Diplomate, American Board of Internal Medicine; Fellow, American College of Physicians, New York Academy of Medicine, Royal Society of Tropical Medicine and Hygiene; Past President, American Society of Tropical Medicine; Consultant to Surgeon General, U. S. Public Health Service; Consultant in Tropical Medicine, Veterans Administration.

Specialty: Internal Medicine.



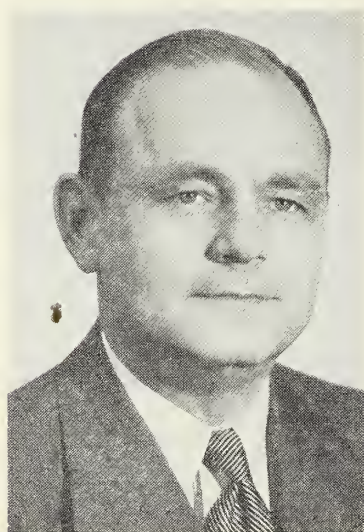


PAUL ARTHUR O'LEARY, M.D.

Rochester, Minnesota

Graduate, Long Island College of Medicine, 1915; Head of Section on Dermatology and Syphilology, Mayo Clinic; Professor of Dermatology and Syphilology, Mayo Foundation Graduate School of Medicine; Past Chairman, Section on Dermatology and Syphilology, American Medical Association; Diplomate, American Board of Dermatology and Syphilology; Fellow, American College of Physicians; Past President, American Academy of Dermatology and Syphilology; Chief Editor, Archives of Dermatology and Syphilology.

Specialty: Dermatology and Syphilology.



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Cannon Falls, Minnesota

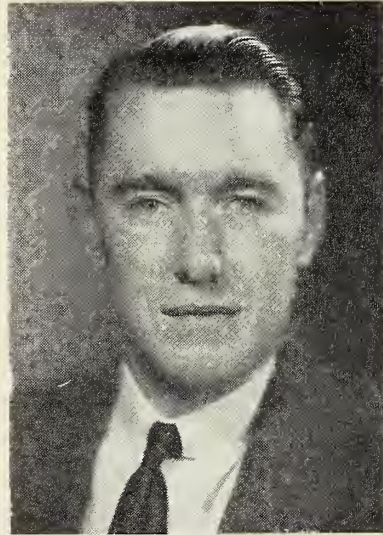
Graduate, University of Kansas School of Medicine, 1934; Medical Director and Superintendent, Mineral Springs Sanatorium, Cannon Falls; Instructor in Medicine, University of Minnesota School of Medicine; Fellow, American College of Chest Physicians; Member, American Trudeau Society.

Specialty: Tuberculosis.

JOSEPH H. PRATT, M.D.*Rochester, Minnesota*

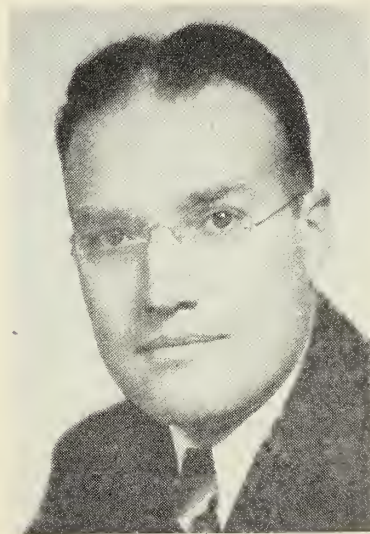
Graduate, Harvard Medical School, 1937; Instructor in Surgery, Graduate School, University of Minnesota; Head, Section of Surgery, Mayo Clinic; Fellow, American College of Surgeons; Member, Minnesota Society of Obstetricians and Gynecologists, Sigma Xi.

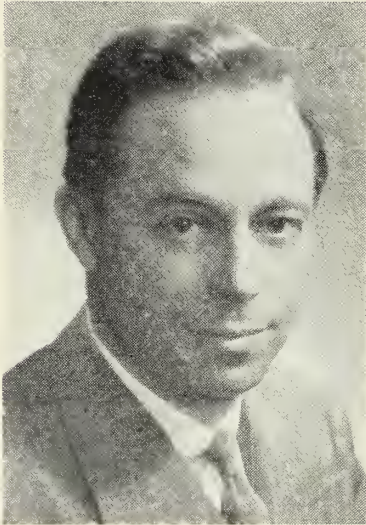
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**HENRY KING RANSOM, M.D.***Ann Arbor, Michigan*

Graduate, University of Michigan Medical School, 1923; Associate Professor of Surgery, University of Michigan; Surgeon, University Hospital, Ann Arbor, Michigan; Diplomate, American Board of Surgery; Fellow, American College of Surgeons; Member, Western Surgical Association, American Surgical Association, Central Surgical Association.

Specialty: Surgery.





CHARLES WILBUR RUCKER, M.D.

Rochester, Minnesota

Graduate, Medical School of University of Minnesota, 1925; Associate Professor in Ophthalmology, Mayo Foundation. Diplomate, American Board of Ophthalmology; Member, American Academy of Ophthalmology and Otolaryngology, American Ophthalmological Society.

Specialty: Ophthalmology.



WILLIAM ANTHONY SODEMAN, M.D.

New Orleans, Louisiana

Graduate, University of Michigan Medical School, 1931; William Henderson Professor of the Prevention of Tropical and Semi-Tropical Diseases and Chairman of Department of Tropical Medicine and Public Health, Tulane University of Louisiana; Diplomate, American Board of Internal Medicine; Fellow, American College of Physicians, Royal Society of Tropical Medicine and Hygiene; Member, Society for Experimental Biology and Medicine, American Society for Clinical Investigation, Central Society for Clinical Research.

Specialty: Internal Medicine.

LEE EDWARDS SUTTON, JR., M.D.

Richmond, Virginia

Graduate, Harvard Medical School, 1921; Professor of Pediatrics, Medical College of Virginia; Pediatricist in Chief, Medical College of Virginia Hospital; Pediatrician, Crippled Children's Hospital; Member, American Academy of Pediatrics, American Heart Association.

Specialty: Pediatrics.



Committee Chairmen

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Scientific Exhibits and Movies—A. A. Fink, M.D. Auxiliary—Clyde B. Trees, M.D.

Schedule of Events

90TH ANNUAL SESSION

Topeka, May 9, 10, 11, 12, 1949

Monday Morning, May 9

- 9:30 Annual Meeting, Board of Directors, Kansas Physicians' Service (Blue Shield)
Jayhawk Hotel, Roof Lounge
This will be a business session and will include election of officers.
- 10:00 Practice Rounds, Kansas Medical Golfing Association
Topeka Country Club, 27th and Buchanan Streets
- 10:00 Practice Trap Shooting, Kansas Medical Skeet and Trapshooting Association
Topeka Gun Club, Six Miles East of Topeka on Highway 40, North Side of Highway
- 12:00 Annual Meeting, Kansas Hospital Service Association (Blue Cross)
Kansan Hotel, Circle Ranch Room
This will be a business session and will include election of officers.

Monday Afternoon, May 9

- 1:00 Competitive Golfing, Kansas Medical Golfing Association
Topeka Country Club, 27th and Buchanan Streets
- 1:30 Competitive Trap Shooting, Kansas Medical Skeet and Trapshooting Association
Topeka Gun Club, Six Miles East of Topeka on Highway 40, North Side of Highway
- 3:00 Viewing of Exhibits by Kansas Medical Assistants' Society
Municipal Auditorium, South Entrance
- 7:30 Tournament Banquet
Topeka Country Club, 27th and Buchanan Streets
Awarding of prizes for golf and trap shoot.
Election of officers.

Tuesday Morning, May 10

- 8:00 Registration
Municipal Auditorium, South Entrance
Open 8:00 A.M. to 5:00 P.M.
Opening of Scientific and Technical Exhibits

Tuesday Morning, May 10—(Continued)

FIRST GENERAL SESSION

Municipal Auditorium, Assembly Room

Presiding: Robert Soblberg, Jr., M.D., McPherson, Kansas

9:30 Address of Welcome

Leo A. Smith, M.D., Topeka, Kansas

President, Shawnee County Medical Society

9:45 Tropical Disease Problems Among Veterans of World War II

Thomas T. Mackie, M.D., Winston-Salem, North Carolina

A group in excess of 600 individuals examined in the Tropical Disease Clinic of the Regional Office, Veterans Administration, Winston-Salem, North Carolina, has shown that approximately 60 per cent of these individuals have some chronic tropical or parasitic infection other than malaria. The most important infection, numerically and in terms of disability, is chronic amebiasis. Approximately 36 per cent of the veterans examined have shown infections by the *Endameba histolytica* and in the majority of instances these infections have been clinically significant. A very small proportion had been previously diagnosed. Other infections encountered include hookworm, especially *Ancylostoma duodenale*, filariasis and schistosomiasis. The diagnoses and treatment of these infections will be discussed.

10:15 Inflammatory Lesions of the Intestines

Henry K. Ransom, M.D., Ann Arbor, Michigan

Regional enteritis and chronic ulcerative colitis have many features in common including their histopathology, age of patients and symptomatology. The exact etiology of both of these diseases is unknown. Factors which play a part in the genesis of these two conditions are considered. An anatomical and clinical classification of the enteritides is given, and case reports illustrating the various problems in diagnosis and treatment are presented. Several complications are discussed along with indications for operation and the choice of surgical procedures. An attempt will be made to evaluate the several forms of treatment which have been employed.

10:45 Intermission to Visit Exhibits

11:00 The Early Diagnosis of Poliomyelitis

Lee E. Sutton, Jr., M.D., Richmond, Virginia

The symptoms and signs of poliomyelitis are described as they usually appear. From the findings that occur along with laboratory results a diagnosis of poliomyelitis is derived. A differential diagnosis is presented for those conditions that are confused with poliomyelitis during the occurrence of an epidemic.

12:00 Round Table Luncheons

EENT—Kansan Hotel, Indian Room

Guest Speakers: William D. Gill, M.D., San Antonio, Texas

C. Wilbur Rucker, M.D., Rochester, Minnesota

Presiding: Lester A. Latimer, M.D., Alexander, Kansas

Tuesday Round Table Luncheons—(Continued)

Gastroenterology and Proctology—Jayhawk Hotel, Green Rooms B and C

Guest Speakers: Thomas T. Mackie, M.D., Winston-Salem, North Carolina
Walter A. Fansler, M.D., Minneapolis, Minnesota

Presiding: Leo A. Smith, M.D., Topeka, Kansas

Pediatrics—Kansan Hotel, Circle Ranch Room

Guest Speaker: Lee E. Sutton, Jr., M.D., Richmond, Virginia

Presiding: Lucius E. Eckles, M.D., Topeka, Kansas

Surgery—Jayhawk Hotel, Florentine Room

Guest Speaker: Henry K. Ransom, M.D., Ann Arbor, Michigan

Presiding: John W. Cavanaugh, M.D., Topeka, Kansas

Tuesday Afternoon, May 10**SECOND GENERAL SESSION**

Municipal Auditorium, Assembly Room

Presiding: John M. Porter, M.D., Concordia, Kansas

2:00 President's Address

Oscar W. Davidson, M.D., Kansas City, Kansas

2:20 The Year Ahead

J. Haddon A. Peck, M.D., St. Francis, Kansas

2:30 Carcinoma of the Stomach

Henry K. Ransom, M.D., Ann Arbor, Michigan

The results of treatment of carcinoma of the stomach at present leave much to be desired. For improvement, earlier diagnosis is essential and the various special methods of examination, e.g. radiologic, endoscopic and the cytologic examination of gastric secretions, are evaluated. A more aggressive attitude toward gastric ulcer will make possible surgical treatment for a certain number of patients with early carcinoma in whom the prognosis is relatively good. The extension of surgical therapy in the form of total gastrectomy and the transthoracic approach for lesions which cannot be dealt with by the conventional method will be considered. The use of subtotal gastrectomy in preference to the simpler short circuit operations as a palliative procedure for lesions obviously not curable due to metastases will be mentioned. The end results of treatment are reviewed. Some of the less common neoplasms of the stomach will be discussed with reference to their recognition, treatment and prognosis.

3:00 Symptoms and Early Diagnosis of Carcinoma of the Large Bowel

Walter A. Fansler, M.D., Minneapolis, Minnesota

Surgery in cancer is seldom curative except in early lesions. Through education the public has become increasingly cancer conscious. As a result patients are consulting physicians for symptoms which a few years ago would be ignored. Now it is not only a question of recognizing symptoms which definitely indicate the presence of cancer but also recognizing symptoms which suggest the possibility of cancer. Careful history plus careful examination are enabling us to discover early cancers which in the past were frequently overlooked. Bleeding is probably the most significant symptom of early cancer. Any patient with this symptom or any other unexplained symptom is entitled to a most careful examination which, to lessen chances of error, should follow a routine pattern.

Tuesday Afternoon, May 10—(Continued)

3:30 Intermission to Visit Exhibits

3:45 Chronic Ulcerative Colitis—A Medical and Surgical Problem

Thomas T. Mackie, M.D., Winston-Salem, North Carolina

Chronic ulcerative colitis is a cyclic, recurrent, gradually progressive disease characterized by periods of exacerbation and spontaneous remission. The extent of the lesions and the degree of permanent scarring increase with each recurrence. No specific infectious etiology has been demonstrated. Clinical observations based on a group in excess of 100 cases under observation for periods up to 10 years strongly suggest the existence of a polyvalent mechanism which includes primary infection, secondary infection, local sensitization of the affected portion of the colon to solid protein, primary and secondary nutritional deficiencies, and possibly a physiologic deficiency inherent in the individual.

4:15 Management of the Poliomyelitic Respiratory Case

Lee E. Sutton, Jr., M.D., Richmond, Virginia

The clinical picture and the management of the respiratory case is described. Symptoms and signs are presented along with treatment for the following stages of a patient suffering with respiratory difficulty: (a) the pre-respirator stage; (b) the acute respirator case; (c) convalescence within the respirator; (d) the post-respirator stage.

6:30 University of Kansas Alumni Banquet

Jayhawk Hotel, Roof Garden

Presiding: Eldon S. Miller, M.D., Kansas City, Kansas, President

There will be an informal program. The speaker will be an alumnus of the University of Kansas School of Medicine.

8:30 House of Delegates Meeting

Jayhawk Hotel, Roof Garden

Wednesday Morning, May 11

7:30 Breakfast, Kansas Academy of General Practice

Jayhawk Hotel, Florentine Room

Presiding: Clyde W. Miller, M.D., Wichita, Kansas, President

General business session and election of officers.

8:30 Registration

Municipal Auditorium, South Entrance

Open 8:30 A.M. to 5:00 P.M.

Opening of Scientific and Technical Exhibits

THIRD GENERAL SESSION

Municipal Auditorium, Assembly Room

Presiding: Philip W. Morgan, M.D., Emporia, Kansas

Wednesday Morning, May 11—(Continued)

9:00 The Modern Approach to Control of Tuberculosis

Karl H. Pfuetze, M.D., Cannon Falls, Minnesota

Tuberculosis can be practically eliminated as a threat to human welfare and happiness if our present knowledge of case-findings and treatment are fully realized and implemented. By adequate follow-up of known cases, Mantoux testing, mass miniature x-ray surveys of communities and proper follow-up procedures of suspected cases, tuberculosis is usually found early enough to permit a good prognosis in most cases if adequate care and treatment are promptly provided.

In any case-finding program the active cooperation of the private practitioner is absolutely essential. Without his help the public health officer and the sanatorium physician cannot do the job that must be done.

Home care of tuberculosis is a very poor substitute for treatment in a modern sanatorium with a staff of well trained physicians. Sufficient sanatorium beds should be available to provide care for all who need it. Adequate isolation is essential to prevent the spread of the disease. Education of the public regarding tuberculosis should be continued and improved. to assure the success of this program.

We have the tools—now let's do the job.

9:30 Hemorrhoidectomy (Fansler Technique)

Walter A. Fansler, M.D., Minneapolis, Minnesota

The object of a hemorrhoidectomy is to remove all hemorrhoidal tissue, excess rectal mucosa, anoderm and skin, yet leave the operative field in such condition that stricture will not result or subsequent function be impaired. In 1931 the author described a method which, with some modification, has been used since that time. It is easily executed and anatomically correct. The use of a specially designed anoscope permits removal of all pathological tissue without distortion of the operative field or disturbance of the normal anatomical relationships. This renders the procedure practically fool proof and even in the hands of the relatively inexperienced uniformly good results are the rule.

10:00 Intermission to Visit Exhibits

10:15 Sectional Meetings—Medical, Surgical, Obstetrical

Symposium on Heart Disease—Assembly Room

Symposium on Varicose Veins—Rooms 102, 103, 104

Symposium on Labor and Postpartum Care—Room 101

Medicine—Symposium on Heart Disease

Assembly Room

Presiding: Philip W. Morgan, M.D., Emporia, Kansas

10:15 Congenital Heart Disease

Paul W. Schafer, M.D., Kansas City, Kansas

10:35 Anticoagulant Therapy in Coronary Occlusion

Mablon H. Delp, M.D., Kansas City, Kansas

10:55 Advice to the Cardiac Patient

Kenneth L. Druet, M.D., Salina, Kansas

Wednesday Morning, May 11—(Continued)

- 11:15 Discussion
William A. Sodeman, M.D., New Orleans, Louisiana
- 11:30 Meeting, Kansas Heart Society; Porter M. Clark, Jr., M.D., Independence, Kansas, President
- Surgery—Symposium on Varicose Veins
Rooms 102, 103, 104
Presiding: H. Penfield Jones, M.D., Lawrence, Kansas
- 10:15 Pathological Physiology and Diagnostic Tests
Thomas P. Butcher, M.D., Emporia, Kansas
- 10:35 Treatment of Varicose Veins
Lloyd W. Reynolds, M.D., Hays, Kansas
- 10:55 Treatment of Varicose Ulcers
Wendell A. Grosjean, M.D., Winfield, Kansas
- 11:15 Discussion
Joseph H. Pratt, M.D., Rochester, Minnesota
- Obstetrics—Symposium on Labor and Postpartum Care
Room 101
Presiding: Howard C. Clark, M.D., Wichita, Kansas
- 10:15 Prolonged Labor
Harold L. Gainey, M.D., Kansas City, Kansas
- 10:35 Postpartum Care of the Cervix
Ray A. West, M.D., Wichita, Kansas
- 10:55 Saddle Block Anesthesia in Obstetrics
Robert L. Newman, M.D., Kansas City, Kansas
- 11:15 Discussion
Robert J. Crossen, M.D., St. Louis, Missouri
- 12:00 Round Table Luncheons
- Anesthesiology—Kansan Hotel, Kansan Room
Presiding: Paul H. Lorhan, M.D., Kansas City, Kansas
- Meeting, Kansas Society of Anesthesiology
- EEENT—Kansan Hotel, Indian Room
Guest Speakers: William D. Gill, M.D., San Antonio, Texas
C. Wilbur Rucker, M.D., Rochester, Minnesota
Presiding: Edwin N. Robertson, M.D., Concordia, Kansas
- Medicine (Including Tuberculosis and Dermatology)—Jayhawk Hotel, Florentine Room
Guest Speakers: William A. Sodeman, M.D., New Orleans, Louisiana
Karl H. Pfuetze, M.D., Cannon Falls, Minnesota
Paul A. O'Leary, M.D., Rochester, Minnesota
Presiding: Harold O. Bullock, M.D., Independence, Kansas
- Obstetrics and Gynecology—Jayhawk Hotel, Rose Room
Guest Speaker: Robert J. Crossen, M.D., St. Louis, Missouri
Presiding: Hubert M. Floersch, M.D., Kansas City, Kansas

Wednesday Round Table Luncheons—(Continued)

Meeting, Kansas Obstetrical and Gynecological Society, Howard C. Clark, M.D., Wichita, Kansas, President

Surgery and Proctology—Kansan Hotel, Roof Garden

Guest Speakers: Joseph H. Pratt, M.D., Rochester, Minnesota

Walter A. Fansler, M.D., Minneapolis, Minnesota

Presiding: Charles H. Miller, M.D., Parsons, Kansas

Wednesday Afternoon, May 11

FOURTH GENERAL SESSION

Municipal Auditorium, Assembly Room

Presiding: Severt A. Anderson, M.D., Clay Center, Kansas

2:00 Medical Gynecology

Robert J. Crossen, M.D., St. Louis, Missouri

This discussion covers some of the common conditions which can be diagnosed and treated in the office such as evaluation of methods for detection of uterine carcinoma; new points in treatment of some of the common vulvar diseases; leucorrhea; the use of pessaries and some recent advances in diagnosis and treatment of sterility and dysmenorrhea.

2:30 Intestinal Obstruction

Joseph H. Pratt, M.D., Rochester, Minnesota

The patient with intestinal obstruction presents an immediate problem both to the medical practitioner and his surgical colleague in that a diagnosis must be arrived at immediately as to the intraabdominal condition, and treatment must be instigated early. The high mortality that is still associated with intestinal obstruction is but a commentary that the difficulties of this condition have not been solved nor apparently will be for a long time to come.

3:00 Intermission to Visit Exhibits

3:15 Pitfalls in Antibiotic Therapy

William A. Sodeman, M.D., New Orleans, Louisiana

The errors in judgment arising in the choice and use of antibiotics are too often recognized so late that they interfere dangerously with proper therapy. The discussion will bring out some of the most important pitfalls together with the means of avoiding them. The rational use of such agents will be stressed.

3:45 Dermatitis of the Hands

Paul A. O'Leary, M.D., Rochester, Minnesota

Dermatitis of the hands is a troublesome and frequently a difficult problem to unravel. Among the most common factors causing dermatitis of the hands are contacts, foods, neurogenic elements, infections, including fungi as well as bacteria, and occupational factors. Discussion will bring out the means of determining the cause of the problem and the methods of treatment.

4:15 Cancer, the Problem of Early Diagnosis

Motion Picture, Presented by the Kansas Division, American Cancer Society.

4:30 Meeting, Kansas Academy of General Practice

Rooms 107, 108, 109

Guest Speaker: R. B. Robins, M.D., Camden, Arkansas

Presiding: Clyde W. Miller, M.D., Wichita, Kansas, President

Wednesday Evening, May 11—(Continued)

7:00 Annual Banquet

Topeka High School Cafeteria, 10th and Taylor Streets

Presiding: Oscar W. Davidson, M.D., Kansas City, Kansas

Music by Strolling Troubadours

Special Recognition of Past Presidents of Kansas Medical Society

Introduction of the Kansas General Practitioner of the Year

Address—"Our Freedom Can Be Lost," Mr. Arch N. Booth, Secretary, United States Chamber of Commerce, Washington, D. C.

Thursday Morning, May 12

8:30 Registration

Municipal Auditorium, South Entrance

Open 8:30 A.M. to 12:00 Noon

Opening of Scientific and Technical Exhibits

FIFTH GENERAL SESSION

Municipal Auditorium, Assembly Room

Presiding: A. L. Ashmore, M.D., Wichita, Kansas

9:00 Management of Edematous States

William A. Sodeman, M.D., New Orleans, Louisiana

The major factors of importance in the management of edematous states will be outlined and the ways and means of applying the procedures in practice will be stressed. The evaluation of, dangers of, and indications for the various procedures will be brought out.

9:30 The Diagnosis of the Acute Abdomen

Joseph H. Pratt, M.D., Rochester, Minnesota

The diagnosis of the acute abdomen is one of the more exacting diagnostic exercises encountered by the physician and surgeon, due especially to the time element involved and the necessity of coming to a decision early in the course of the disease. Many of these problems arise at the end of a day or at night when the physician physically and mentally is at a low ebb, and a discussion is planned of some of the diagnostic aspects of the difficulties encountered with these patients.

10:00 Uterine Bleeding

Robert J. Crossen, M.D., St. Louis, Missouri

Uterine bleeding may occur at any age. The common causes at various ages are enumerated and methods of differential diagnosis are discussed. The treatment of functional uterine bleeding, myoma and uterine carcinoma are given in some detail.

10:30 Intermission to Visit Exhibits

10:45 Chemotherapy in the Management of Pulmonary Tuberculosis

Karl H. Pfuetze, M.D., Cannon Falls, Minnesota

Emphasis upon the proper use of chemotherapy in pulmonary tuberculosis is necessary, first, because this is the largest category of human tuberculosis and, second, because the problems of antibacterial treatment are most intricate in pulmonary disease, so complex and varied in its pathology. The value of chemotherapy in the medical and surgical treatment of tuber-

Thursday Morning, May 12—(Continued)

culosis is becoming increasingly apparent. Anyone who treats tuberculous patients has an obligation to understand the principles of chemotherapy and to use streptomycin and other antibacterial agents wisely.

The chief misuses of streptomycin have consisted in improper selection of patients, treatment at the wrong time, and unnecessary prolongation of treatment. The greatest danger in the misuse of streptomycin lies in the production of drug-resistant strains of tubercle bacilli, with the result that the patient and anyone else secondarily infected will be denied future use of this form of therapy. Already lives are being lost because streptomycin was used unnecessarily or improperly at a previous time.

Methods being investigated for the avoidance of bacterial resistance include curtailment of the period of treatment, various schedules of intermittent treatment, and the simultaneous administration with streptomycin of other antibacterial agents, particularly promin and para-aminosalicylic acid. Some degree of success has been achieved by all of these methods.

Streptomycin probably will be largely replaced by dehydrostreptomycin. Both experimentally and clinically the latter substance is equal to streptomycin in therapeutic effect and it can be used in large doses with an appreciable decrease in the neurotoxicity caused by comparable doses of the unhydrogenated product.

11:15 Penicillin Therapy of Syphilis

Paul A. O'Leary, M.D., Rochester, Minnesota

Penicillin has revolutionized the treatment of syphilis, especially acute syphilis and neurosyphilis. Many changes have been recommended during the last five years and no doubt many more will follow. Discussion of the value of aureomycin by mouth in the treatment of syphilis will be included in this presentation.

12:00 Round Table Luncheons

Dermatology—Jayhawk Hotel, Green Room A

Guest Speaker: *Paul A. O'Leary, M.D., Rochester, Minnesota*

Presiding: J. P. Berger, M.D., Wichita, Kansas

Medicine—Jayhawk Hotel, Roof Garden

Guest Speaker: *William A. Sodeman, M.D., New Orleans, Louisiana*

Presiding: Clarence W. Erickson, M.D., Pittsburg, Kansas

Meeting, Kansas Society of Internal Medicine; *D. R. Bedford, M.D., Topeka, Kansas, President*

Surgery and Gynecology—Kansan Hotel, Roof Garden

Guest Speakers: *Joseph H. Pratt, M.D., Rochester, Minnesota*

Robert J. Crossen, M.D., St. Louis, Missouri

Presiding: H. St. C. O'Donnell, M.D., Ellsworth, Kansas

Tuberculosis—Kansan Hotel, Kansan Room

Guest Speaker: *Karl H. Pfuetze, M.D., Cannon Falls, Minnesota*

Presiding: C. F. Taylor, M.D., Norton, Kansas

Thursday Afternoon, May 12

SIXTH GENERAL SESSION

Jayhawk Theatre, 107 West Seventh Street

2:00 Symposium on Medical Legislation

Presiding: Oscar W. Davidson, M.D., Kansas City, Kansas

Three nationally known speakers representing medicine, labor, and government will present arguments on voluntary versus compulsory health insurance, after which they will answer questions from the floor.

4:30 House of Delegates Meeting

Jayhawk Theatre, 107 West Seventh Street

5:00 Council Meeting

Jayhawk Theatre, 107 West Seventh Street

Scientific Exhibits

1. Cardiovascular Studies at the University of Kansas Medical Center—William Cochran, M.D., James E. McConchi, M.D., Paul W. Schafer, M.D., and Hampton W. Shirer, M.D., University of Kansas Medical Center, Kansas City, Kansas.
2. Epidemic Diarrhea of Newborn—Committees on Child Welfare and Maternal Welfare of the Kansas Medical Society, Kansas Obstetrical and Gynecological Society, and Kansas State Board of Health, Topeka, Kansas.
3. The Renogram—Andrew Mitchell, M.D., and William L. Valk, M.D., University of Kansas Medical Center, Kansas City, Kansas.
4. Vocational Rehabilitation Service, Topeka, Kansas.
5. State Sanatorium for Tuberculosis, Norton, Kansas, C. F. Taylor, M.D., Superintendent.
6. Autoradiographic Studies of the Distribution of Metabolized Radium in Relation to Bone Structure—Mr. Frank E. Hoecker and Professor Paul G. Roofe, University of Kansas, Lawrence, Kansas.
7. Rehabilitation of the Chronic Neurological Patient—Veterans Administration Center, Wadsworth, Kansas.
8. Fibrocystic Disease of the Pancreas—R. C. Knappenberger, M.D., and Frank L. Menehan, M.D., Wichita, Kansas.
9. Modern Methods of Anesthesia—Gretchen Guernsey, M.D., and Paul H. Lorhan, M.D., University of Kansas Medical Center, Kansas City, Kansas.
10. Automatic Evacuating Container to Take the Place of Bedpan—D. E. Eckart, M.D., Abilene, Kansas, and Mr. Dick Rosenleaf, Enterprise, Kansas.
11. Observations During the Treatment of Acute Leukemia with a Folic Acid Antagonist (Aminopterin)—Sloan J. Wilson, M.D., University of Kansas Medical Center, Kansas City, Kansas.
12. Trigeminal Neuralgia—Ralph M. Stuck, M.D., Denver, Colorado.
13. TB—Every Hospital's Problem—Kansas Tuberculosis and Health Association, Topeka, Kansas.
14. Kansas Hospital Association, Topeka, Kansas, Mr. Charles S. Billings, Executive Secretary.
15. Prevention of Blindness Department—State Department of Social Welfare, Topeka, Kansas.
16. American Red Cross, Topeka, Kansas.
17. Some Unusual Facial Reconstructions—David W. Robinson, M.D., University of Kansas Medical Center, Kansas City, Kansas.
18. Robert E. Stowell, M.D., University of Kansas Medical Center, Kansas City, Kansas.
19. Genito-Urinary Tuberculosis—Hjalmar E. Carlson, M.D., C. Laurence Johnson, M.D., Jack H. Hill, M.D., Kansas City, Missouri.
20. Pathological Demonstrations—Kansas Society of Pathologists.
21. Kansas Society of Technologists.
22. Atchison, Topeka and Santa Fe Hospital Association, Topeka, Kansas.
23. Menninger Foundation, Topeka, Kansas.
24. Body Section Roentgenography—G. M. Tice, M.D., University of Kansas Medical Center, Kansas City, Kansas.

Eye, Ear, Nose and Throat Section

All Meetings in Municipal Auditorium, Room 201

Tuesday Morning, May 10

- 8:00 Registration
Municipal Auditorium, South Entrance
Open 8:00 A.M. to 5:00 P.M.
Opening of Scientific and Technical Exhibits
- 9:15 Introduction of Speaker: LaVerne B. Spake, M.D., Kansas City
Diagnosis and Treatment of Otitis Externa
William D. Gill, M.D., San Antonio, Texas
This common otological entity will be discussed from the standpoint of etiology, classification, symptomatology and therapy. The importance of mycotic infections will be stressed. The prevention as well as treatment of this special type of external otitis will be discussed as well as the complications which may be encountered. The numerous mycoid preparations will be mentioned and the author's personal experience with them reviewed. The prevention of such infections as well as the prophylaxis of swimming in relation to the ear will be included. The immunologic aspects of such infections will be considered.
- 10:00 Intermission to Visit Exhibits
- 10:30 Introduction of Speaker: John A. Billingsley, M.D., Kansas City,
The Visual Pathway and Some Characteristic Field Defects
C. Wilbur Rucker, M.D., Rochester, Minnesota
The structure of the visual pathway will be described and various defects characteristic of lesions in various locations will be explained. Emphasis will be placed on homonymous hemianopsia arising as the result of lesions in the temporal and occipital lobes.
- 12:00 Round Table Luncheon
Kansan Hotel, Indian Room
Guest Speakers: William D. Gill, M.D., San Antonio, Texas
C. Wilbur Rucker, M.D., Rochester, Minnesota
Presiding: Lester A. Latimer, M.D., Alexander, Kansas

Tuesday Afternoon, May 10

- 1:30 Presiding: C. R. Kempthorne, M.D., Manhattan, Kansas
Fractures of the Facial Bones
William D. Gill, M.D., San Antonio, Texas
The causes of such fractures, their types, and methods of handling will be presented. The various complications encountered will be mentioned and especially the relationship of such injuries to the orbit and its contents as well as the importance of involvement of the nasal accessory sinuses will be discussed. The importance of this type of injury as an otological entity will be discussed. Dental relationships will also be included. Fractures of the nasal bones and their surgical treatment will be included. The choice of procedure and anesthetic preferred in individual cases will be discussed. Remote complications and the correction of residual deformities will be included.
- 2:15 Intermission to Visit Exhibits
- 2:45 Presiding: George F. Gsell, M.D., Wichita, Kansas
Chiasmal Lesions
C. Wilbur Rucker, M.D., Rochester, Minnesota
Lesions in the optic chiasm account for at least 25 per cent of all brain tumors. Disease processes occurring in this region include tumors of various types, especially those arising in the pituitary body, aneurysms and inflammation. Medical and surgical forms of therapy at the present time are fairly successful in the treatment of several of these.

Wednesday Morning, May 11

- 8:30 Registration
Municipal Auditorium, South Entrance
Open 8:30 A.M. to 5:00 P.M.
Opening of Scientific and Technical Exhibits
- 9:15 Presiding: Frank C. Boggs, M.D., Topeka, Kansas
Lesions of the Optic Nerves
C. Wilbur Rucker, M.D., Rochester, Minnesota
The varieties encountered most frequently in the practice of the ophthalmologist today are due to multiple sclerosis and syphilis. These will be considered in some detail and discussed from the viewpoint of pathology and therapy.
- 10:00 Intermission to Visit Exhibits
- 10:30 Presiding: Maurice J. Ryan, M.D., Kansas City, Kansas
The Conservative Treatment of Paranasal Sinus Diseases
William D. Gill, M.D., San Antonio, Texas
A presentation of therapeutic measures applicable to the treatment of both acute and chronic involvement of the paranasal sinuses will be presented. Cytological examination of the nasal secretions will be mentioned. Physical factors influencing paranasal sinus disease and the methods of overcoming or modifying them will be included as well as the importance of climatic effect on the course of such conditions, the importance of allergic relationships and *especially* dietary influence will be discussed. Topical treatment, the use of various therapeutic agents, sprays, vaccines and antibiotics will be considered.
- 12:00 Round Table Luncheon
Kansan Hotel, Indian Room
Guest Speakers: William D. Gill, M.D., San Antonio, Texas
C. Wilbur Rucker, M.D., Rochester, Minnesota
Presiding: Edwin N. Robertson, M.D., Concordia, Kansas

Wednesday Afternoon, May 11

- 1:30 Presiding: W. W. Reed, M.D., Topeka, Kansas
Nystagmus, a Clinical Classification and Motion Picture Demonstration
C. Wilbur Rucker, M.D., Rochester, Minnesota
Nystagmus will be classified on a basis that can be of help clinically. Types will be described and differentiated according to whether they arise as the result of ocular disturbance, a disorder in the vestibular system, within the ocular muscle or within the central nervous system.
- 2:15 Intermission to Visit Exhibits
- 2:45 Presiding: Norton L. Francis, M.D., Wichita, Kansas
The Various Uses of Radiation Therapy in Otolaryngology
William D. Gill, M.D., San Antonio, Texas
The discussion of this subject will be limited to x-ray and radium as applied to pathological conditions of the ear, nose and throat. In reference to the ear the application of x-ray and radium to the treatment of dermatoses, infections, and painful conditions about the ear, as well as malignancies will be considered. In reference to the nose the use of x-ray and radium in the treatment of hyperplastic lymphoid tissue, nasopharyngeal fibroma, polyps, infections, and the various types of pain of nasal origin as well as their application to the treatment of malignancies will be considered. In reference to the larynx the discussion will be confined almost exclusively to the treatment of malignancies, although their assistance in the treatment of certain rare lesions will be discussed.

Round Table Luncheons

Tuesday, May 10

EENT—*Kansan Hotel, Indian Room*

Guest Speakers: William D. Gill, M.D., San Antonio, Texas
C. Wilbur Rucker, M.D., Rochester, Minnesota
Presiding: Lester A. Latimer, M.D., Alexander, Kansas

GASTROENTEROLOGY AND PROCTOLOGY—*Jayhawk Hotel, Green Rooms B and C*

Guest Speakers: Thomas T. Mackie, M.D., Winston-Salem, North Carolina
Walter A. Fansler, M.D., Minneapolis, Minnesota
Presiding: Leo A. Smith, M.D., Topeka, Kansas

PEDIATRICS—*Kansan Hotel, Circle Ranch Room*

Guest Speaker: Lee E. Sutton, Jr., M.D., Richmond, Virginia
Presiding: Lucius E. Eckles, M.D., Topeka, Kansas

SURGERY—*Jayhawk Hotel, Florentine Room*

Guest Speaker: Henry K. Ransom, M.D., Ann Arbor, Michigan
Presiding: John W. Cavanaugh, M.D., Topeka, Kansas

Wednesday, May 11

ANESTHESIOLOGY—*Kansan Hotel, Kansan Room*

Presiding: Paul H. Lorhan, M.D., Kansas City, Kansas
Meeting, Kansas Society of Anesthesiology

EENT—*Kansan Hotel, Indian Room*

Guest Speakers: William D. Gill, M.D., San Antonio, Texas
C. Wilbur Rucker, M.D., Rochester, Minnesota
Presiding: Edwin N. Robertson, M.D., Concordia, Kansas

MEDICINE (Including Tuberculosis and Dermatology)—*Jayhawk Hotel, Florentine Room*

Guest Speakers: William A. Sodeman, M.D., New Orleans, Louisiana
Karl H. Pfuetze, M.D., Cannon Falls, Minnesota
Paul A. O'Leary, M.D., Rochester, Minnesota
Presiding: Harold O. Bullock, M.D., Independence, Kansas

OBSTETRICS AND GYNECOLOGY—*Jayhawk Hotel, Rose Room*

Guest Speaker: Robert J. Crossen, M.D., St. Louis, Missouri
Presiding: Hubert M. Floersch, M.D., Kansas City, Kansas
Meeting, Kansas Obstetrical and Gynecological Society; Howard C. Clark, M.D., Wichita, Kansas, President

SURGERY AND PROCTOLOGY—*Kansan Hotel, Roof Garden*

Guest Speakers: Joseph H. Pratt, M.D., Rochester, Minnesota
Walter A. Fansler, M.D., Minneapolis, Minnesota
Presiding: Charles H. Miller, M.D., Parsons, Kansas

Thursday, May 12

DERMATOLOGY—*Jayhawk Hotel, Green Room A*

Guest Speaker: Paul A. O'Leary, M.D., Rochester, Minnesota
 Presiding: J. P. Berger, M.D., Wichita, Kansas

MEDICINE—*Jayhawk Hotel, Roof Garden*

Guest Speaker: William A. Sodeman, M.D., New Orleans, Louisiana
 Presiding: Clarence W. Erickson, M.D., Pittsburg, Kansas
 Meeting, Kansas Society of Internal Medicine; D. R. Bedford, M.D.,
 Topeka, Kansas, President

SURGERY AND GYNECOLOGY—*Kansan Hotel, Roof Garden*

Guest Speakers: Joseph H. Pratt, M.D., Rochester, Minnesota
 Robert J. Crossen, M.D., St. Louis, Missouri
 Presiding: H. St. C. O'Donnell, M.D., Ellsworth, Kansas

TUBERCULOSIS—*Kansan Hotel, Kansan Room*

Guest Speaker: Karl H. Pfuetze, M.D., Cannon Falls, Minnesota
 Presiding: C. F. Taylor, M.D., Norton, Kansas

Scientific Movies

Municipal Auditorium, Room 102

Tuesday, May 10

- 9:00-10:00 Regional Anesthesia
- 10:00-10:30 Edema, Cardiac and Renal
- 10:30-11:20 Surgery of Common Bile Duct
- 11:25-12:00 Surgical Rx of Cancer of the Rectum without Colostomy
and Preservation of Sphincter
- 1:00- 2:00 Requests
- 2:00- 2:45 An Improved Technique for Operative Treatment of Com-
mon Ano-Rectal Lesions

Wednesday, May 11

- 9:00- 9:40 Clinic on Deafness
- 9:40-10:10 Bilateral Femoral Vein Interruption
- 1:00- 2:00 Requests
- 2:00- 3:00 Hypothyroidism Diagnosis, Etiology, Treatment
- 3:00- 3:40 Strange Hunger
- 3:50- 4:50 Sex Hormones

Thursday, May 12

- 9:00- 9:50 Cancer: The Problem of Early Diagnosis
 - 9:50-10:40 Arteriosclerotic Heart Disease
 - 10:50-11:30 Management of Failing Heart
 - 11:30- Repeat Requests
- The following additional films are available for showing on request:
- Pancreato-Duodenal Resection
 - Radical Operation for Cancer of the Prostate
 - Radical Operation for Cancer of the Cervix

Woman's Auxiliary to the Kansas Medical Society

Annual Meeting, May 9-12, 1949

Topeka, Kansas

All Sessions in Municipal Auditorium, Rooms 107, 108, 109

Monday, May 9

1:00- 4:00 Registration, Municipal Auditorium

Tuesday, May 10

9:00- 4:00 Registration, Municipal Auditorium

9:00 Pre-Convention Board of Directors Meeting

2:30- 4:00 Tea, Governor's Mansion

7:00 Buffet Dinner, Honoring Past Presidents, Kansan Hotel,
Roof Garden

Wednesday, May 11

9:00-12:00 Registration, Municipal Auditorium

9:00 General Session

Doctors' wives not members of the Auxiliary are most welcome

1:00 Luncheon Honoring Mrs. Luther H. Kice, National Auxiliary President, and State Officers, Jayhawk Hotel Roof Garden

7:00 Annual Kansas Medical Society Banquet

Thursday, May 12

9:00 Post-Convention Board of Directors Meeting
Symposium—To be announced

Kansas Medical Assistants' Society

Annual Meeting, May 8 and 9, 1949

Kansan Hotel, Topeka, Kansas

SUNDAY, MAY 8

- 10:00 A.M. Registration. Open 10:00 A.M. to 2:00 P.M.
- 2:00 P.M. Address of Welcome—D. R. Bedford, M.D., Topeka, Kansas.
- 2:15 P.M. Response—Haddon Peck, M.D., St. Francis, Kansas, President-elect, Kansas Medical Society.
- 2:30 P.M. Business Meeting and Election of Officers—Presiding, Miss Regina Lewis, Wichita, Kansas, President, Kansas Medical Assistants' Society.
- 3:30 P.M. You and the Patient—Phyllis J. Burdon, M.D., Winter Veterans Administration Hospital, Topeka, Kansas.
- 4:00 P.M. Blue Shield—Mrs. Margaret Foster and Mr. Proctor Redd, Topeka, Kansas.
- 4:30 P.M. Socialized Medicine—A. A. Fink, M.D., Topeka, Kansas.
- 6:00 P.M. Buffet Supper.
- 7:00 P.M. "Those Hats"—Mr. Tom Gregg, Radio Station WREN, Topeka, Kansas.

MONDAY, MAY 9

- 9:00 A.M. Registration. Open 9:00 A.M. to 10:00 A.M.
- 10:00 A.M. Meeting Called to Order—Miss Regina Lewis, Wichita, Kansas, President, Kansas Medical Assistants' Society.
- 10:05 A.M. Greetings—Mrs. Peggy Federgreen, Topeka, Kansas, President, Shawnee County Medical Assistants' Society.
- 10:10 A.M. Response—Miss Della Dunagan, Douglass, Kansas.
- 10:15 A.M. Functional Music—Mr. Donald Michel, Music Supervisor, Winter Veterans Administration Hospital, Topeka, Kansas.
- 10:45 A.M. The Life of a Doctor in France—Andre Baude, M.D., Topeka, Kansas.
- 11:15 A.M. The Role of the Social Worker in the Treatment of Mental Illness—Mrs. Marcia A. Leader, Psychiatric Social Worker, Menninger Foundation, Topeka, Kansas.
- 12:30 P.M. Luncheon
"Parlez Vous Francais"—Mr. Olaf Soward, Radio Station WIBW, Topeka, Kansas.
- 2:00 P.M. Installation of Officers.
- 3:00 P.M. Viewing of Exhibits, Municipal Auditorium, Eighth and Quincy Streets, Topeka, Kansas.

PRESIDENT'S PAGE

Dear Doctor:

I started out praying last year, the prayer of the little Negro boy in the molasses barrel, "Lord, make my tongue equal to my opportunity."

Full significance of the fact that I was about through struck me recently when I heard Oliver Ebel's end of a long distance conversation with Dr. Peck about meeting him someplace to make plans for next year. I realize now how close I am to the bottom of this page too, and what a different meaning it may have for you than it does for me.

I want you to know though how very very much you have contributed to the success of the team this year. Never has a Council coached more able and energetic field generals with such fine squads of committeemen. Every squad kept in condition throughout the entire season. We had wonderful support from our allied groups and their many friends. Our Auxiliary and our medical assistants never once failed to appreciate the significance of the year's program.

When I wrote you last spring, that this was your year and that George was not going to carry the ball, little did I realize there were so many Georges so willing to go places with that ball. It really has been wonderful to be captain of such a team. I beg of you to carry on in the same fine spirit toward greater accomplishments under our new captain for next year and years to come.

Choice of Franklin D. Murphy, dean of our medical school, by the Junior Chamber of Commerce as the outstanding man of Kansas was an honor to the medical profession. Dr. Murphy would like to share that honor with you and friends of the medical profession in Kansas. Such a spirit does much to advance our public relations program.

This year's blend of politics and public relations has been such that, according to Dr. Forrest Loveland, we came out of this legislative session smelling more like a rose than ever before. To those of you who know how closely he keeps tab of the pulse of the law makers, that statement is a challenge to us for future accomplishments. We must continue to be constructive.

Enthusiasm for an objective goes a long way toward accomplishment of the goal. Your support of the A.M.A. public relations program will result in a real awakening of the public to acquire facts about socialization trends. Talk whenever you can on the subject. Better still, arm your friends with the facts. They can tell the story more effectively. Boost Blue Cross and Blue Shield.

Several worthy things have come to light as the result of our meeting with members of allied professions. Detailed suggestions will be sent you as soon as possible. Attention to all these facts will promote public relations and common understandings. To cite one example—Food and Drug laws require that you give a prescription or verbal approval to the pharmacist for many drugs. Please don't put your pharmacist on the spot by sending your patient without a prescription and designating how many refills you approve. Little courtesies to all our allied friends will pay big dividends.

It has been distressing to learn of this or that unethical incident throughout the state. The public is better informed today. They are more apt to correctly analyze the reasons for one colleague's criticism of another. They will more fully appreciate those who adhere to the Golden Rule.

I sincerely believe the more we get together the more ethical we will be, so start planning now to attend the 90th anniversary session. We have much to celebrate this year and many plans to make for the future. We will be terribly disappointed if you are not there. See other details elsewhere in this issue.

Your name badge will have large enough letters for me to read with my bifocals, and I sure want you and your wife to join in when we sing, "Hail! Hail! The Gang's All Here." Thanks again for everything.

Sincerely,



President.

President and President-elect



O. W. Davidson, M.D., President

During a legislative year the president of the Kansas Medical Society faces extraordinary responsibilities. Dr. O. W. Davidson's term in this office provided an exception only in the direction that during this year legislative activities were unusually involved. If nothing else were to be recalled, Dr. Davidson's work for the Society would always remain memorable because his was the year that the medical school received funds for expansion. This year brought about the culmination of the planning and the beginning of the reality of the Kansas Rural Health Plan.

That, however, is only a portion of Dr. Davidson's contributions. He took a great interest in the work of all committees and personally attended virtually every meeting that was held during the year. He advised and encouraged the committees in projects, many of which will be effective toward the improvement of health in Kansas for years to come. Outstanding in this regard is his interest in obtaining closer cooperation between the medical profession and the many allied groups in Kansas.

Among the innovations which Dr. Davidson brought to the Society were the first annual Kansas Medical Day held at the University of Kansas School of Medicine and the first annual conference of county society officers. This list could be expanded, but suffice it to say that no president has ever given more thought

and devoted attention to the interests of the Society than has Dr. Davidson. His year is marked with many achievements for which the Society takes this opportunity to express its gratitude.

Dr. Haddon Peck has served the Society for many years and in spite of the great distance he has been required to travel he has regularly attended meetings. There are few physicians who have given more time to their medical society than has Dr. Peck. The Society, therefore, is fortunate in having as its president-elect a man widely known, universally respected, and one who is thoroughly acquainted with all major activities in which the Society is engaged.

During the past year Dr. Peck provided the inspiration for the Kansas Plan and on his initiative obtained the cooperation of the farmers of this state not only for the expansion of the medical school but also to the extent that resolutions were passed, first by the Kansas Farm Bureau and finally by the American Farm Bureau Federation, voicing opposition to government control of medical care.

Dr. Peck will bring many new constructive programs to the medical society in the coming year. His will be a progressive year, directed toward giving the people of Kansas better medical care. He requests the support and cooperation of each member in the field of professional as well as public services so that the Kansas Medical Society may demonstrate the superiority of private enterprise in medical care over any other conceivable system. He has set a goal to make the Society more truly of public service than ever before and in that effort pledges a renewed interest in civic and welfare programs locally and on a national scale. This needs the combined effort of all members if the goal is to be achieved.



Haddon Peck, M.D., President-Elect

Councilor Reports

FIRST DISTRICT

To the House of Delegates:

The First District has had a very progressive year in the practice of medicine and its related activities. One district meeting was held November 9, 1948, at Seneca, Kansas, as guests of the Nemaha County Medical Society. This was a joint meeting with the Auxiliary and was well attended.

Most of the counties are having regular meetings with guest speakers, who present scientific papers. Brown and Atchison Counties had one joint dinner meeting.

The Blue Shield and Blue Cross have been increasing in popularity, with still plenty of requests from prospective members. We have been honored by the appointment of Dr. Conrad Barnes, from this district, as head of the Blue Shield.

Complaints have been very few and those were easily and quickly settled. One almost universal problem seems to be care of the indigent and the contracts with the county welfare boards.

Hiawatha has started construction on a much needed hospital that will help fill a decided lack of hospital beds in this district. Atchison has plans and money for additional beds in the hospital. Several other localities have started activities toward increasing hospital facilities.

The doctors in this district have been very enthusiastic about the work of the new medical school dean, Dr. Franklin D. Murphy. He has made several talks in the district and has done a lot to keep the practicing physicians interested in the medical school.

Our district has had the best of co-operation from the state officers and the central office in Topeka. The doctors who attended the special presidents and secretaries meeting felt the time well spent and hope they can be continued. I am not alone in believing that the First District is one of the best places in the world in which we can practice medicine.

Respectfully submitted,
W. L. Anderson, M.D., *Councilor*.

SECOND DISTRICT

To the House of Delegates:

In the death of the preceding councilor, Dr. Lewis G. Allen, of Kansas City, Kansas, the second district, as well as the Kansas Medical Society in general, suffered an irreparable loss. His energetic personality and his organizational ability will be missed by all who knew him. His office as councilor from the

Second District was filled by appointment until the next meeting of the state society, when a successor will be elected for the full term.

Reports from the secretary of each county medical society indicate that conditions in the Second District are generally satisfactory. In the majority of counties, meetings are held once a month, from September to June. In two or three counties, having a smaller number of doctors, meetings are held less regularly, although the societies are fully organized and hold meetings as conditions permit. In one county only two meetings were held during the past year.

Attendance at all county medical society meetings was reported to be much less than desired. This is to be regretted, especially since the county society is the only official organization through which the physician can seek protection for his individual rights and privileges, and support the aims of organized medicine. In the larger societies regular programs with papers by local members are the rule; in others, dinner meetings with great speakers serve to stimulate interest and result in better attendance.

In two counties hospital and laboratory facilities were reported as definitely inadequate. In these counties the laboratory of the State Health Department, and other private laboratories rendered this valuable service. Anderson County has voted bonds for a new county hospital, with building scheduled to begin this summer.

Two counties are in urgent need of additional younger, energetic general practitioners. This matter has been called to the attention of the dean of our medical school, in the hope that some of the on-coming graduates might be interested in investigating promising locations.

Reaction to the special assessment by the state Society last year varied from county to county. The purpose of the assessment was well known and the response was good. The special assessment by the A.M.A., however, is meeting with more resistance, perhaps because the ultimate use of funds so raised is less clearly understood. It is hoped that all members will see fit to support this measure as well as they supported the special assessment by the state.

Several problems were settled peacefully by a committee appointed by the president. All county secretaries were urged to encourage the delegates from their respective counties to attend all the meetings of the House of Delegates during the next state meeting in May.

Respectfully submitted,
A. J. Rettenmaier, M.D., *Councilor*.

THIRD DISTRICT*To the House of Delegates:*

I feel that the medical profession in the third district has been operating very smoothly during the past 12 months. This feeling has been assisted in no small measure by the activity of the Southeast Kansas organization, also by closer inter-society relations, all seemingly designed, in part at least, to increase our determination to preserve our heritage. I feel the improvement is one any district has the right to be proud of.

The veterans program, the vocation and rehabilitation program and The Blue Cross and Blue Shield have each made contributions to better understanding (even though some were of negativism.)

I have the feeling each one in the third district joins me in giving thanks and credit to whomsoever such is due in securing Dr. F. D. Murphy as dean of our state medical school; furthermore, it is my opinion he has the support of each and every man.

In conclusion, I feel that taking the year as a whole, which has called for little specific action for correction, it has been one of the most successful years. It is my humble opinion we should be able to gather more forces for the obvious struggle lying immediately ahead, namely, to maintain our present status of patient-doctor relations.

Respectfully submitted,

C. H. Benage, M.D., *Councilor*.

FOURTH DISTRICT*To the House of Delegates:*

There is very little of especial interest to report from the Fourth District. Hospitals are still overcrowded and in Emporia Newman Hospital will soon start a new addition, bonds for which were voted over a year ago. The American Red Cross has established a blood bank in Emporia which should be of great benefit to the surrounding district.

Newman and St. Mary's Hospitals of Emporia both have tumor clinics, each of which meet twice a month. There are two staff meetings and a county medical society meeting each month. It means that the doctors in this vicinity are in close touch with each other and that, I feel, adds to the good will which prevails among physicians in this area. It also keeps them informed on the recent advances in medicine.

A tribute was paid to Dr. C. W. Lawrence of Emporia on his retirement from practice. Doctor Lawrence had been a leading surgeon in this part of the state for the past 25 years. Dr. Lawrence was made an honorary member of the American Medical Association, the Kansas Medical Society, the Lyon County Medical Society and of the staff of the St. Mary's and Newman Hospitals.

A great loss was suffered by Emporia and the surrounding territory in the death of Dr. W. B. Granger, who was struck down by an automobile in December. Doctor Granger was one of the outstanding eye, ear, nose and throat specialists in Kansas.

Dr. Carter B. Siegel has started practice here associated with Dr. J. J. Hovorka. Dr. Charles R. Hopper is now associated with Dr. C. C. Underwood. Dr. E. L. Gann, specialist in ear, nose and throat, is now associated with Dr. D. P. Trimble.

Respectfully submitted,

F. Foncannon, M.D., *Councilor*.

FIFTH DISTRICT*To the House of Delegates:*

The contacts which I have made with all the counties in my district bring an assurance of general good will and grievance of only a minor nature. The counties of Harvey, Marion and McPherson are showing much interest and good results from the Tri-County organization. The counties of Rice, Reno, Barton and Stafford recently acquiesced in the organization of the Midwest Kansas Medical Society, which includes many of the counties south and west.

The Reno County Medical Society shows a lack of interest in its county society and is not in line with the high type of men in practice in Hutchinson and Reno County.

There is no evident antagonism to the special assessment of the A.M.A. and it generally is accepted as for a worthy cause and necessary.

The interest in the Medical Practice Act shows no sign of abating and all are anxiously awaiting the Supreme Court decision while they deplore the fact that nothing is done with the violators of this act.

Respectfully submitted,

L. J. Beyer, M.D., *Councilor*.

SIXTH DISTRICT*To the House of Delegates:*

The past year has been quite uneventful as far as matters in the Sixth District are concerned. We have been particularly busy with Topeka attendance and particularly the meetings of the Blue Cross-Blue Shield organization, and as a result time has been limited as far as county visitations are concerned.

County meetings in the district have been quite up to par with the Sedgwick County Society, of course, being particularly outstanding.

Plans are in progress at the present time for a Council District Meeting in Topeka early in April at which time we expect to perfect our Physicians Relationship organization and also to consider some other Blue Shield problems.

Respectfully submitted,

Warren F. Bernstorf, M.D., *Councilor*.

SEVENTH DISTRICT*To the House of Delegates:*

A report of conditions in the Seventh District is presented below:

Jewell County. All doctors practicing in the county are members of the Society and meet on call only. Most of the doctors attend adjoining county meetings.

Republic County. All doctors practicing in the county except one are members of the Society. No meetings were held during the past year, and meetings are subject to call.

Mitchell County. All doctors practicing in the county are members of the Society. A meeting is held every month with outside speakers eight months of the year.

Washington County. This society has just re-organized with 100 per cent membership. Quarterly meetings are planned.

Cloud County. There is 100 per cent membership with monthly meetings. Meetings are not held while postgraduate course is in operation.

Clay County. All doctors practicing in this county are members with one exception. Meetings are held monthly with about half outside speakers.

Riley County. This society has 100 per cent membership. It has monthly meetings with outside speakers four or five times a year.

All doctors in the district have paid the Kansas Medical Society special assessment, with two exceptions, and the councilor has visited four of the counties in the district.

Respectfully submitted,

Hugh A. Hope, M.D., *Councilor*.

EIGHTH DISTRICT*To the House of Delegates:*

Your councilor has not found it possible to visit all component societies within his district during the past year, but in the absence of any complaints either from the organized societies or from individual members within the societies he begs to report that things are progressing satisfactorily within this councilor district.

Respectfully submitted,

W. A. Smiley, M.D., *Councilor*.

NINTH DISTRICT*To the House of Delegates:*

It was reported last year by your Councilor from the Ninth District that medical care was excellent and that this district was a very prosperous one with perhaps the fewest indigents and age group assistance of all times. The medical care and hospital situation has improved since last year. The pros-

perity has continued with slight signs of weakening since the first of the year.

Medical meetings have been held at regular intervals and have been well attended. An encouraging number of young doctors have been admitted to their local society during the year. The Northwest Kansas Medical Society and the Ninth District comprise about the same area. There was one death, Dr. A. P. Fleckenstein, of Selden, Kansas, age 71, who died suddenly of a heart attack January 29.

The new doctors entering practice in the Ninth District during the last year are: Doctor Floyd Smith at Colby, formerly with the Eddy Clinic at Hays; D. E. McCoy at Oberlin; Francis Bishop, now associated with Dr. Gertsen, Atwood; J. W. Pavelsek, now associated with Dr. Nelson at Oberlin; W. W. Gist, now associated with Dr. Peck, St. Francis. Dr. Rodney Jones, after practicing medicine two years in Goodland, returned to Denver, Colorado, where he formerly was established before joining the armed forces.

This has been a boom year in the district for hospital expansion. If this can be interpreted as an index for better medical care, then the far cry shall have been answered.

Colby will dedicate their St. Thomas Hospital of 95-bed capacity the 26th of this month (March, 1949). This ultra fine and well equipped hospital is not only something for the local citizens to be proud of, but whole Northwest Kansas is proud of it. It was made possible by the Catholic Sisters, Thomas County and liberal private donations.

Atwood, Kansas, has under construction a 32-bed hospital that is about one-half completed. It is estimated the building will be in use after 90 days. The Atwood hospital is financed by county and private donations, at the cost of \$325,000.

Norton reports contract let for new fire proof 35-bed hospital at a cost of \$357,000. It is to be finished in 1950.

After many set backs Goodland has just completed a new 30-bed addition to the old 20-bed hospital, making a total of 50 beds without crowding. The new addition is taking the load while the old part is remodeled. The project was started at an estimated cost of \$100,000, but when finished will have required \$275,000. It has been financed by the Methodist hospital organization, a government grant of \$40,000 and private donations plus earnings from the pre-existing hospital. It will be noted by those interested in finance and hospital construction that to build and fully equip a modern hospital during our present inflation requires approximately \$10,000 per bed versus \$2,000 a few years ago.

It is interesting to note increasing new interest by the general public in Blue Cross and Blue Shield.

Though there is a difference at times in the charge and the amount paid by these agencies, my patients have all been happy about it and feel it is the best bargain they have ever invested in. I do not too well understand the working of the Blue Shield but I think there should be some agency to organize the groups so as to make it available to all who want or need it. When I ask my patients, "Why do you not avail yourself of Blue Shield protection," they say, "I want it but I am not in a group."

Your councilor wishes to express for the district its gratitude and appreciation to the Extension Division of the University Medical School and its instructors who have come nearly to the Colorado line with the series of lectures. This has done and will do a great deal to improve rural medical care.

Respectfully submitted,

M. J. Renner, M.D., *Councilor*.

TENTH DISTRICT

To the House of Delegates:

In the Tenth District we could still use some more physicians. Every town and most of our counties are fairly well covered. However, most of the men are working too hard, and feel that they could do a better job if they had more time to spend with each patient. This seems true of most communities, although a few more men might pass the point of saturation.

During the past year Dr. F. L. Smith of Hays has moved to Colby, where he is practicing general medicine and surgery, and Dr. H. A. Flanders, formerly of the University Medical Center, is now located at Hays, where he is specializing in internal medicine.

Quarterly meetings of the Central Kansas Medical Society have been well attended. The programs have been good and of universal interest. In the past year no postgraduate meetings have been held in this district, as Colby was designated as the meeting point the last time. Some of our members have been able to attend, but bad roads and bad weather have somewhat hampered their attendance in the past few months.

The postgraduate meetings in Kansas City have been well attended by members of this district and the younger men especially are extremely enthusiastic about them. I think all members of this district admire the enthusiasm and activity of the new dean of the University Medical Center and are anxious to support him in every way possible.

There has been some criticism regarding the attitude, but not the aim or objects, of the American Medical Association, in regard to the threatened compulsory medical insurance plan. So far as we have been able to determine, the A.M.A. has not presented

its side to the unions, the National Farm Bureau, and other organizations, who while at present are supporting the government plan, are still greatly interested in good medical care for their members. I think that it is up to us to inform them of the fallacies and of the enormous expense of the government plan, as compared to one that the physicians themselves might provide. Our president-elect, Dr. Peck, did a big service by attending last year's meeting of the National Farm Bureau, and a good many of our members are wondering why our national association has not shown more interest in taking this to larger groups. Your councilor, personally, takes a very dim view regarding high paid professional public relations counsel. It is very much like hiring another fellow to do your fighting, and it seems to me that the mercenary has never done as well as the patriot. This, however, is informal, and represents no formal opinion of members of this councilor district. There has been no appreciable opposition to paying the new assessment by the A.M.A., but there has been a good deal of speculation as to whether our parent body knew what to do with it after they had gotten it.

I think that the over-all picture in the Tenth District can be summarized by saying that it has been an extremely busy year, that new men have made their readjustments very nicely, and that the quality of medical care has shown progressive improvement.

Respectfully submitted,

Murray C. Eddy, M.D., *Councilor*.

ELEVENTH DISTRICT

To the House of Delegates:

In the Eleventh District, the outlook for medical care in the future is very good. Construction was begun the first of the year on Pratt County's new hospital, with 65 beds. The management will be by the Sisters of St. Joseph. St. John is completing a new hospital, which will meet a long wanted need in that territory.

Society meetings have not been held as regularly this year as in the past. It seems hard to get the men out to meetings. Road and weather conditions have contributed some to this. A new society has been organized in this part of the state, consisting of Pratt, Stafford, Edwards and Barton counties, called "The Mid-West Medical Society." Dr. Clark W. Zugg is president; Dr. J. R. Campbell, vice president, and Dr. Justin Blount, secretary-treasurer. The first meeting was held in Great Bend on February 23, 1949. A very good program was presented by Dr. Thomas Meyer of the Mayo Clinic.

No new doctors have located in this district in the

past few months. I feel that the medical care in this district has been ample during the past year.

Respectfully submitted,
J. R. Campbell, M.D., *Councilor*.

TWELFTH DISTRICT

To the House of Delegates:

The Twelfth District has been rather inactive the past 12 months as far as district meetings are concerned. There were some meetings held, but they were poorly attended as there was no issue of par-

ticular interest to this district. There is no county in this district that does not have a member of the Kansas Medical Society practicing in it. The new doctors who have come in are young men, very active and very capable, and we feel fortunate in being so well represented with this type of physician.

We are sorry to report the recent death of Dr. Davis of Dodge City, who was one of our active young men in Ford County.

Respectfully submitted,
G. R. Hastings, M.D., *Councilor*.

Kansas Physicians' Service

To the House of Delegates:

Blue Shield enrollment doubled during 1948. The increase was from 53,204 to 106,480. Earned income for the year was \$745,282.98, and a total of \$596,221.66 (80 per cent of income) was paid to physicians for services rendered to member patients. Administrative expense was \$74,211.12 (9.96 per cent of income), and enrollment expense was \$44,160.12 (5.92 per cent of income). The reserve as of December 31, 1948, was \$77,260.78 or an increase of \$30,691.08 and this is largely invested in government bonds. The financial condition as of February 28 is shown below:

ASSETS

Cash in Bank	\$ 5,696.92
Due from Blue Cross	79,143.95
Due From Others	1,028.98
U. S. Government Bonds (Par \$190,000.00)	190,576.00
	<hr/>
	\$276,445.85

LIABILITIES

Incomplete Physicians' Cases	\$ 3,576.60
Unreported Physicians' Cases (Est.)	73,201.08
Due Blue Cross	12,314.75
Due Others	249.01
Dues Paid in Advance	98,214.90
	<hr/>
Total Liabilities	\$187,556.34
RESERVE	88,889.51
	<hr/>
Total Liabilities and Reserve	\$276,445.85

The strength of Blue Shield has been proved. It is a going and successful program in which almost all Kansas physicians are participating. We are faced with vigorous attempts by the federal govern-

ment to institute an incoherent and unsound compulsory insurance plan. Physicians and the lay public alike are looking to Blue Shield as the best answer and as the most effective block to the plans of possible well meaning, but none-the-less dangerous government employees and politicians.

Plans for increasing the availability of membership and for accelerating enrollment are underway. A Physicians Relations Committee composed of a member from each councilor district is being formed. Also, Liaison Committees are being set up in each district. Through the activity of these committees, together with the help of the Medical Economics Committee, the Board of Trustees believe that they and the individual participating physician will reach a better understanding of the job to be done.

In order to keep pace with changing conditions, the Board feels that a thorough review of the Blue Shield program should be made. To the end of a revised Blue Shield contract, the Board earnestly requests the suggestions and active support of all Kansas physicians.

Some of the questions on which the trustees seek your comments are:

1. Should the level of income designating the "Service" bracket (this is those patients for whose care the physician agrees not to charge more than is allowed by the Blue Shield contract) be raised from the present \$1800 a year on single memberships and \$2400 a year on family memberships to a higher level—say an income level which would take in about 75 per cent of your member-patients?

2. At the same time, should the membership dues be increased and the fee schedule, including surgery, x-ray, anesthesia and medical care, be raised so that the physicians' return is a little more?

3. Should many of the minor surgery fees such as excision of sebaceous cysts, incision of boils, etc., be eliminated and substitute a more extensive coverage

of medical conditions, such as diabetic comas, cerebral hemorrhages, etc.?

4. At present the patient pays the first \$9.00 of the allowance for hospitalized, non-surgical illness. Should the non-surgical benefit be changed so as to provide a payment on patients who are hospitalized only one, two or three days?

5. Should diagnostic service be included in the

Blue Shield contract?

Whatever changes are made must be compatible with sound insurance. So, to the physicians of Kansas the Board of Trustees say—"This is your program, but keep in mind that it is the people's program too, and if the return to either party is not satisfactory, then we will fail."

Conrad M. Barnes, M.D., *President.*

Committee Reports

ALLIED GROUPS

T. P. Butcher, Chr., Emporia; J. O. Austin, Garden City; R. M. Carr, Jr., Junction City; R. D. Dickson, Topeka; D. M. Diefendorf, Waterville; D. A. Kendall, Great Bend; W. J. Kiser, Wichita; R. R. Melton, Marion; E. A. Reeves, Kansas City; A. J. Rettenmaier, Kansas City; R. R. Snook, Manhattan; W. L. Speer, Osawatomie.

To the House of Delegates:

Dr. O. W. Davidson, president, has envisioned a program for our cooperation with certain groups whose interests are, in one way or another, allied to those of the medical profession. He feels that insofar as such interests are shared, or are not opposed, such cooperation will serve to strengthen the positions of all parties concerned and to extend their influence in the direction of better professional services to the public.

Your Allied Groups Committee, functioning through its sub-committees, one for each group, has made contact with the following groups: morticians, nurses, pharmacists, insurance men, attorneys, dentists, and veterinarians.

At the present writing, meetings have not been held with all groups contacted, but it is indicative of the value of this program that favorable replies were received from everyone and that the meetings that were held resulted in constructive suggestions.

A sub-committee met with the funeral directors and a better understanding was obtained with reference to the need for autopsies. The Kansas Funeral Directors Association invited members of this committee to appear before eight regional meetings held in this state last year. An indirect result of this conference was the introduction of a bill in the state legislature to simplify the means whereby permission for autopsies could be obtained. Another result of the conference was to introduce a bill into the legislature simplifying the procedure for obtaining burial permits. This committee begs to note that as a result of this meeting a much better understanding of problems that face funeral directors was obtained. It is strongly recommended that similar conferences continue in the years to follow so that a closer working cooperation with this important profession may be perpetuated.

Your sub-committee on nurses approved the revision of the nurses practice act as prepared by the Kansas State Nursing Association and is working toward future meetings where the problem of nurse shortages, the practical nurse, and numerous public relations matters can be worked out.

The sub-committee on pharmacy reports numerous conferences in small groups with representatives of the Kansas State Pharmaceutical Association and reports that many problems were discussed. Among them were such items as the proper control of the barbiturates, narcotic prescriptions, etc. Still to be solved are matters such as the dispensing physician and the prescribing druggist. The committee reports, however, that friendly relations have been established and that the outlook is good for future cooperation.

One of the most interesting events of the past year was a meeting between a sub-committee and the insurance groups of Kansas. In general, the problem of socialization was discussed. It was learned that the insurance men are as vitally concerned as is the medical profession and that they are taking steps to assist in the battle to defeat such measures. It was interesting to your committee to learn that this meeting, called on the invitation of the medical society, was the first time that insurance men in Kansas involving the different lines of insurance had ever come together. In the past, life underwriters, for instance, had met frequently but never with fire underwriters or with health and accident insurance men. This meeting not only brought the medical society in contact with those persons but also gave them an opportunity to talk over their own common problems for the first time. It is natural that at a first meeting of this type many details were left unsolved, but future meetings are planned which should continue to prove helpful.

In the future meetings are planned with representatives of the Kansas Bar Association, dentists, veterinarians, and others.

The value of the meetings held this year, we believe, has demonstrated the advantages to be found

in such a program. Your committee urgently recommends that this work be continued in the future and that as progress is made with these groups additional allied groups be contacted.

Respectfully submitted,

T. P. Butcher, M.D., *Chairman.*

ANESTHESIOLOGY

L. L. Bresette, Chr., Kansas City; C. D. Bell, Pittsburg; H. J. Brown, Winfield; H. H. Hyndman, Wichita; P. H. Lorhan, Kansas City; R. S. McKee, Leavenworth; C. D. McKeown, Wichita; H. F. Spencer, Emporia; F. C. Taggart, Topeka.

To the House of Delegates:

The Committee on Anesthesiology has had three meetings during the current year. The first meeting was held in Kansas City early in the year, the second in Salina in September, and the third in Emporia on March 1.

The committee has recommended that Dr. Paul Lorhan conduct a second annual postgraduate course in anesthesia at the University of Kansas in April.

It has also recommended that the anesthesiologists in Kansas join the American Society of Anesthesiologists.

We suggest that we should have some renowned anesthesiologist on the program of the next meeting of the Kansas Medical Society.

The status of the blood program was discussed, and a committee was appointed to carry on further study. This committee is to report back at the next meeting.

The Blue Shield program in Kansas and fees for anesthetics were also discussed.

We believe that we have created considerable interest in anesthesia in the state of Kansas and intend to continue with our program so that anesthesia will be more and more conducted by the medical profession rather than by nurses and technicians.

Respectfully submitted,

L. L. Bresette, M.D., *Chairman.*

AUXILIARY

C. O. West, Chr., Kansas City; F. C. Beelman, Topeka; J. R. Campbell, Pratt; E. L. Cooper, Wichita; L. J. Schaefer, Salina; R. W. Urie, Parsons.

To the House of Delegates:

The Auxiliary to the Kansas Medical Society has made some very marked strides forward during the past year. There have been two new groups organized.

They have carried forward a definite program in Hygeia, showing an increase in subscriptions over the previous years.

Nurse recruitment has been encouraged by scholarships by the various units of the Auxiliary.

The majority of the county Auxiliaries have sponsored the usual Health Education Teas; they have

been well attended and are proving of much value each year.

The Kansas Medical Auxiliary is still represented on the National Board, for which Kansas is quite proud.

There has been a revision of the by-laws to coincide with the national by-laws and this has necessitated readjusting some of the programs of the various Auxiliaries.

The national president has informed us that she will be present at the annual meeting.

Mrs. C. D. Blake, as president, is to be commended for she has given unstintingly of her time and energy to promote and correlate the program of the Auxiliary during the past year.

Respectfully submitted,

C. Omer West, M.D., *Chairman.*

CHILD WELFARE

B. I. Krehbiel, Chr., Topeka; M. S. Boyden, Lawrence; A. W. Butcher, Wakefield; D. R. Davis, Emporia; T. C. Hurst, Wichita; L. N. Speer, Kansas City; J. A. Wheeler, Newton.

To the House of Delegates:

The Committee on Child Welfare has held one meeting during the past year, a joint session with the Committee on Mental Health at the State Training School at Winfield, September 23, 1948. The group inspected the institution and then held a business session.

The committee voted to continue providing a Child Welfare Page in each issue of the Journal of the Kansas Medical Society.

As a result of committee activity, a plan of studying infant deaths in Kansas has been inaugurated. It is being carried out through the office of the Kansas State Board of Health. That agency is accumulating data on the deaths of all Kansas infants under one year of age, and is preparing a summary of the information. Your Committee on Child Welfare will review the information at each of its future meetings and will prepare an analysis and report at the end of the year as a contribution to the science of medicine.

Respectfully submitted,

B. I. Krehbiel, M.D., *Chairman.*

CONSERVATION OF EYESIGHT

C. J. Mullen, Chr., Kansas City; B. J. Ashley, Topeka; R. E. Cheney, Salina; G. F. Gsell, Wichita; J. E. Hill, Wellington; L. A. Latimer, Alexander; W. W. Reed, Topeka; W. M. Scales, Hutchinson; D. P. Trimble, Emporia.

To the House of Delegates:

A number of problems have been presented to members of the Committee on Conservation of Eyesight by correspondence during the past year, and a meeting of the committee is now being planned. Since that meeting will be held too late to be report-

ed in this issue of the Journal, we wish to advise that the following matters will be discussed:

Revision of the physician's eye examination report in the Prevention of the Blind program.

Revision of the fee schedule for treatment of cases under the Social Welfare Blind program.

Consideration of treatment of other conditions of the eye.

Referring of eye cases from one locality to another by other than ophthalmologists.

Respectfully submitted,

C. J. Mullen, M.D., *Chairman.*

CONSTITUTION AND RULES

A. W. Fegty, Chr., Wichita; F. R. Croson, Clay Center; N. L. Francis, Wichita; H. E. Haskins, Kingman; E. M. Sutton, Salina.

To the House of Delegates:

Your committee has felt for several years that because of the many radical changes made since the Constitution and By-Laws was printed in 1942, it was advisable to reprint and distribute same to the membership.

With this in view, typewritten copies of the Constitution and By-Laws, as amended, have been prepared so that a meeting could be held to consider any necessary or advisable alterations or deletions which might make the same more efficient.

This meeting has been deferred in the absence of any report from the SPECIAL COMMITTEE requested by the 1948 House of Delegates for the consideration of:

1. Is a nominating committee desirable for this Society?

2. If so, should this committee be elective or appointive, and what offices should be covered by the committee, and should more than one nomination be made for each?

This committee desires as near a perfect and satisfactory working plan for the Society as is possible and welcomes and will consider any alterations or deletions suggested to any part of the present Constitution and By-Laws, as amended, before it is reprinted.

Respectfully submitted,

A. W. Fegty, M.D., *Chairman.*

CONTROL OF CANCER

O. R. Clark, Chr., Topeka; J. P. Berger, Wichita; H. O. Bullock, Independence; H. C. Clark, Wichita; D. E. Gray, Topeka; C. A. Hellwig, Wichita; J. J. Hovorka, Emporia; M. V. Laing, Kansas City; C. H. Miller, Parsons; H. F. O'Donnell, Wichita; O. F. Prochazka, Liberal; R. H. Riedel, Topeka; H. E. Snyder, Winfield; R. E. Stowell, Kansas City; G. M. Tice, Kansas City; K. E. Voldeng, Wellington.

To the House of Delegates:

As in previous years, the committee wishes to express its appreciation to the members of the Society throughout the state for the cooperation which has

been given to the program of cancer control outlined by the committee. Without this general support there could not have been the success which has attended the program through this year.

In addition to the 19 diagnostic tumor clinics in operation one year ago, seven additional clinics have been inaugurated and are operating in conformity with the minimum standards for such clinics as established by the committee. Thus there are now 26 diagnostic tumor clinics which have met the minimum standards of the committee; seven of these are approved by the American College of Surgeons as Diagnostic Clinics, and five others are listed as approved for both Diagnostic and Treatment Clinics by the College. Others have undoubtedly met the requirements of the College but have not yet been inspected for approval by that body.

Each of these 26 diagnostic tumor clinics was aided by a grant of \$500 from the Kansas Division of the American Cancer Society to help defray the expenses of operation of the clinic. This grant has been made on a year-to-year basis, and before a second year's grant is given the clinics are inspected by a team representing the committee, in order to ascertain that the clinic is definitely fulfilling the minimum requirements. This program of inspection of the clinics is one which is still under way, and may be expected to continue through several years.

Dr. Robert H. Riedel, director of the Division of Cancer Control of the Kansas State Board of Health, has, through constant efforts, increased the scope of the cancer registry which was started only about two years ago. There are now 54 participating hospitals, representing an increase of 11 over one year ago. These hospitals have received, by virtue of their registry participation, a total of nearly \$24,000 during the past year, which represents an increase of approximately \$1400 over the previous year, when there were 43 participating hospitals. Of this amount, approximately one-half has been given by the Kansas Division of the American Cancer Society as its share of aid to the cancer registry. Participation in this registry is one of the requirements for approval of a diagnostic clinic, but it will be noted that there are other hospitals participating in the registry in addition to those which are operating diagnostic clinics.

The program of cancer detection in every doctor's office, to which the committee has given emphasis and for which the special physical examination blank was designed, will probably be considerably stimulated when these blanks are published to the laity. This move is anticipated within the near future, and will probably result in patients coming to their doctors with the request that they be given the

examination as outlined on the cancer detection forms. It should be worth repetition to the doctors to remind them that the blank was not designed as one more form for them to fill out; it is rather designed as a time saver for the doctor, being at the same time a reminder to do a complete examination and furnishing an easy way of recording it. Normal findings need only a check mark, while abnormal findings may be described as required. As a further time saving feature for the doctor, it is designed so that the patient can fill out the history part himself—even before coming to the doctor's office—so that long periods of questioning for negative items of a history are eliminated.

Your committee has been opposed to the indiscriminate furnishing of free examinations or free medicines for large numbers of people who are not indigents, because it feels that such free examinations are not in the best interests of medical practice. They are one more step forward toward socialization and as done in a detection clinic or other type of organization doing mass examinations of supposedly well patients, they require an excessive amount of time from the doctor's practice. Since the interest of the doctors and the interest of efficient medical practice and medical care for the people of Kansas has been the central basis of the development of this form, it is to be hoped that its more general use, after suitable publicity to the public, will improve the type of examination as well as the number of examinations made as a part of cancer detection programs. The form is also well suited to use for the individual who comes to his doctor's office "just for a check-up," and its use is advocated in this situation.

Four hospitals have been the recipients of grants totaling \$20,000 from the Kansas Division of the American Cancer Society as assistance in the purchase of x-ray equipment and radium for cancer treatment. This represents an appreciable improvement in the facilities for therapy over the state.

The program of professional education, which is, like most of the other features of the cancer control program, a joint project of your committee with the financial assistance of the Kansas Division of the American Cancer Society, has been a good one for the year. The highlight of this program was the presentation of the first Mid-West Cancer Conference in Wichita, on January 20 and 21, 1949. The conference was a two-day program, with scientific meetings both mornings and afternoons, and with a banquet and program for the doctors and their wives on the evening of the first day. The speaker for the banquet was Dr. Charles S. Cameron, Medical and Scientific Director of the American Cancer Society. The scientific speakers—eight in number—repre-

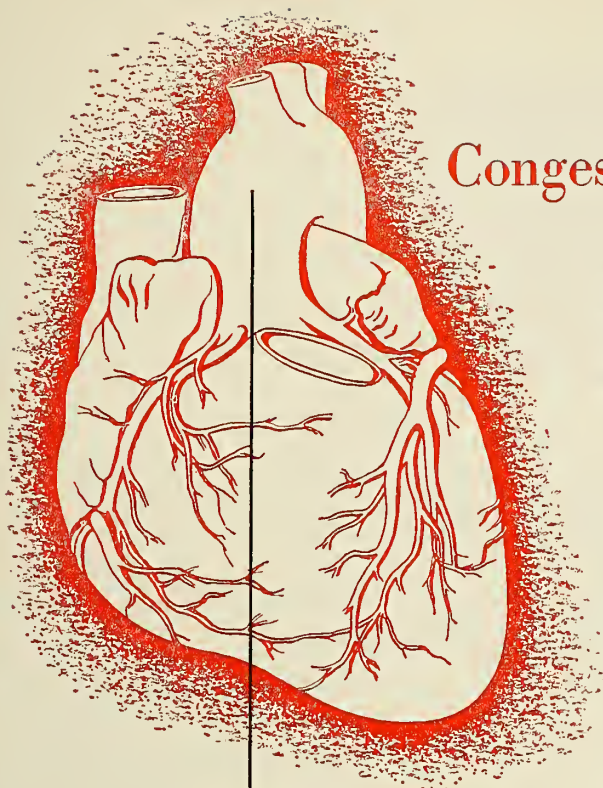
sented the fields of medicine, surgery, gynecology, radiology, pathology, and research. The registration for the meeting was over 100 in spite of extremely unfavorable weather immediately preceding and during the meeting. With the favorable reaction of those who attended, a similar conference is being planned for next year, and we have reason to think that it will be of at least equal value, and should have a larger attendance than this year. The proceedings of the conference were recorded, and are to be published as a supplement to an early issue of the Journal of the Kansas Medical Society.

The distribution of the Kansas Cancer Bulletin, which was started during the preceding year, has been completed this year, and in its full form consists of 24 carefully chosen articles on the diagnosis of early cancer, bound in a suitable cover. This, again, has been distributed by the Kansas Division of the American Cancer Society to all members of the Kansas Medical Society. The committee has continued to supply the cancer page of the Journal of the Kansas Medical Society, and it is expected that this will be carried on for an indefinite period.

The report of the committee for last year mentioned the establishment of a Department of Oncology at the University of Kansas School of Medicine. This department is now actively participating in the professional educational program through teaching activities in the medical school, and through the operation of the cancer clinic at the university. Part of the tumor clinic proceedings and discussions are published in the Journal of the Kansas Medical Society as a feature of the clinical pathological conference of the university.

Under the leadership of Dr. Robert W. Stowell, this department is also engaged in an extensive program of fundamental research on cancer, with financial grants-in-aid from several of the organizations which give such assistance. As this department grows in the future, its influence on our progress in cancer will undoubtedly mean much to the profession of the state.

The report of this committee would not be complete without recognition of honors that have come to two past chairmen. Dr. C. C. Nesselrode, who was the original chairman of the committee, and to whose efforts much of the cancer control program is due, received national recognition of the work which he has done, through election as president of the American Cancer Society at the meeting in November 1948. The receipt of this office is the well deserved recognition of the valuable services which Dr. Nesselrode has contributed to the cause of cancer control. Likewise, Dr. Howard E. Snyder, who for several years past has been chairman of the committee, and whose resignation was accepted with reluctance



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SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

1. Howarth, S.; McMichael, J., and Sharpey-Schafer, E. P.: The Circulatory Action of Theophylline Ethylene Diamine, Clin. Sc. 6:125 (July 17) 1947.

last year, was elected president of the Kansas Division at the meeting in October 1948. This, likewise, is well earned recognition of years of strenuous effort on the part of Dr. Snyder. The committee is justly proud of the achievement of both of these men who were former chairmen of the group.

The dependence upon the cooperation of the Kansas Division of the American Cancer Society for success of our program is also worthy of emphasis, for little of the program which we as a committee have advocated could be put into effect without the aid—in both finances and work—of this organization. This is particularly true in the field of lay education where the women of the Field Army have done so much to improve the knowledge of the public about cancer. There has never been question of the approval of the projects which the committee thought worthy of the aid of the Society, and this cooperation is a real stimulus to the completion of the program which is in progress.

Lastly, but not least, I wish to take the opportunity to express to each member of the committee my appreciation for the full cooperation which has been willingly given by each and every one—through attendance at meetings, and trips for inspections of tumor clinics, and numerous contributions which required time, thought, and effort. A committee with all members active is indeed an unusual one, and is obviously the reason for any successes attained in this program of control of cancer during the current year.

Respectfully submitted,
Orville R. Clark, M.D., *Chairman.*

CONTROL OF TUBERCULOSIS

F. A. Trump, Chr., Ottawa; A. L. Ashmore, Wichita; G. B. Athy, Columbus; R. I. Canuteson, Lawrence; S. L. Cox, Topeka; L. F. Glaser, Hutchinson; H. P. Palmer, Scott City; P. W. Schafer, Kansas City; L. E. Strode, Gard; C. F. Taylor, Norton; C. J. W. Wilen, Manhattan.

To the House of Delegates:

During the past year two meetings of the Committee on Control of Tuberculosis were held, the first September 16, 1948, at the Allis Hotel, Wichita, with good attendance. An enthusiastic discussion was held concerning the proposition of establishing a chair for chronic chest diseases at the medical school and a building to house the unit. This idea originated in this committee four years ago and has been recommended each year that the committee has met since. Dr. Franklin Murphy, dean of the medical school, was present and discussed the problem, giving his views concerning the outcome of the request for the hospital for chronic chest diseases in the coming session of the legislature.

It was moved by Dr. C. F. Taylor that the Committee on Control of Tuberculosis of the Kansas Medical Society go on record as supporting the over-

all building program of the medical school, including units for chronic chest diseases and neuropsychiatry. Motion was seconded by Dr. H. P. Palmer and carried unanimously.

The second meeting of this committee was held March 13, 1949, at the headquarters of the Kansas Tuberculosis and Health Association, Topeka. Reports were given concerning the discovery and treatment of tuberculosis from the following: Dr. C. F. Taylor, superintendent of the state sanatorium; Dr. Jay L. Sitterley, clinician for the Kansas Tuberculosis and Health Association; Dr. E. K. Albrecht, director, Division of Tuberculosis Control, Kansas State Board of Health.

Dr. Taylor reported on the state sanatorium. The institution is doing good work with the newer medical and surgical methods. The staff is much stronger with the addition of more physicians and the assigning of internes from the medical school.

Dr. Sitterley discussed clinical tuberculosis as found in the field through the holding of numerous clinics over the state. He feels that there has developed an apathy concerning tuberculosis, a false impression that the disease is conquered. However, his findings greatly disagree with this supposition. In the few months that he has been working, he has found many cases of active disease and many suspicious cases that should be hospitalized for further study and diagnosis. He feels that the incidence of tuberculosis is much higher in the state than we suspect.

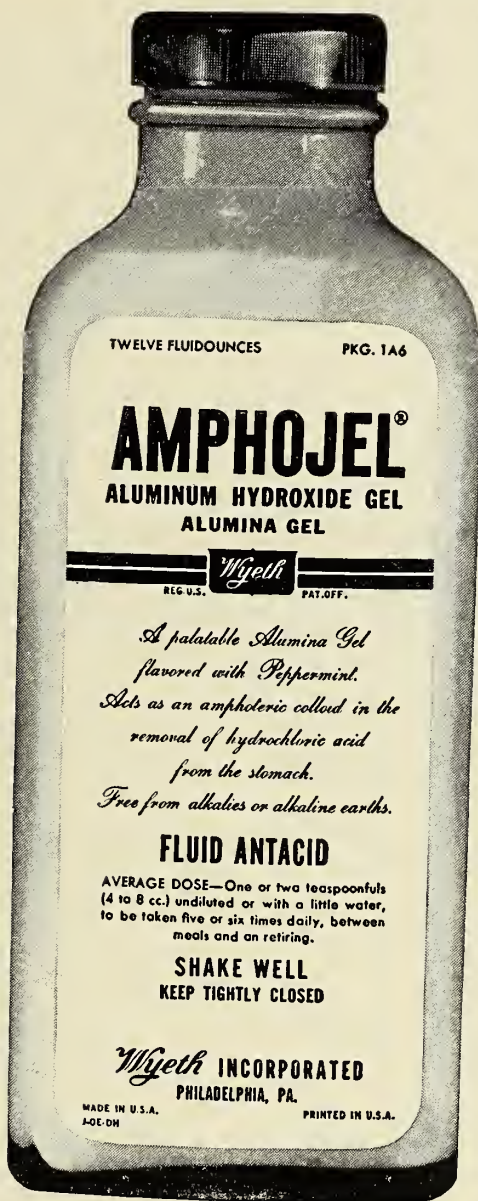
Dr. Albrecht gave impressions from the wealth of material obtained in mass x-raying of chests in the state. The difficulty of follow-up was discussed and again the apparent apathy concerning the disease was emphasized, also the tendency for the healthy to appear for x-rays while the class that would be more likely to have the disease to stay away. He feels that probably the campaign is not worked up well enough by local people who know the ones who need most to be x-rayed. Units from the State Board of Health have x-rayed 300,000 people and 1,400 cases of active tuberculosis have been found.

A motion was made by Dr. Cox and seconded by Dr. Taylor that articles be written and presented to the Journal of the Kansas Medical Society by Drs. Taylor, Sitterley and Albrecht giving the medical profession the experience gained by each writer in his different field, one article to appear in each issue. Motion carried.

Respectfully submitted,
Frank A. Trump, M.D., *Chairman.*

EMERGENCY MEDICAL CARE

G. F. Gsell, Chr., Wichita; W. P. Callahan, Wichita; J. L. Latimore, Topeka; L. S. Nelson, Salina; H. E. Snyder, Winfield.



-----IN THE MEDICAL MANAGEMENT OF PEPTIC ULCER-----

To the House of Delegates:

This committee has served in a standby capacity during the year. Its purpose was to function as a liaison with a council on Emergency Medical Care of the American Medical Association. The policies of this council have as yet not been definitely established. The committee has considered the question of the procurement of younger doctors for the armed services. It expects to present its findings on this question at the annual meeting in May.

Respectfully submitted,

George F. Gsell, M.D., *Chairman.*

ENDOWMENT

J. H. A. Peck, Chr., St. Francis; W. P. Callahan, Wichita; L. S. Nelson, Salina.

To the House of Delegates:

The Committee on Endowment has not had a formal meeting during the past year, but all members have been active in promoting the Rural Health Program and in planning a campaign for funds for construction of a Student Union Building on the campus of the University of Kansas Medical Center.

A sum of \$65,874.47 from other sources is now available for construction of the building. The Kansas Medical Society has set a goal of \$50,000 as its contribution, and a campaign to solicit donations from Society members will be under way soon. Dr. F. R. Croson, Clay Center, has been appointed chairman of the fund raising committee. Your Committee on Endowment approves this project and solicits the support of all members of the Kansas Medical Society.

Respectfully submitted,

J. H. A. Peck, M.D., *Chairman.*

EXPERT TESTIMONY

C. E. Joss, Chr., Topeka; E. J. Frost, Wichita; J. L. Lattimore, Topeka; J. W. Spearing, Columbus; E. M. Sutton, Salina.

To the House of Delegates:

The Committee on Expert Testimony held no meetings during the course of the past year since no matters of sufficient importance to require committee action came before the group. A number of inquiries were referred to the committee and were handled by telephone and correspondence.

Respectfully submitted,

C. E. Joss, M.D., *Chairman.*

HOSPITAL SURVEY

J. L. Grove, Chr., Newton; W. C. Bartlett, Wichita; F. C. Beelman, Topeka; A. Boese, Coffeyville; A. P. Cloyes, El Dorado; H. L. Collins, Beloit; J. D. Colt, V, Manhattan; L. B. Gloyne, Kansas City; A. R. Hatcher, Wellington; O. W. Longwood, Stafford; M. C. Ruble, Parsons.

To the House of Delegates:

The Hospital Survey Committee of the Kansas Medical Society was originally set up to act as a

channel for information between the medical profession and the Kansas Hospital Council, the Kansas Hospital Council being an organization representing a wide variety of interests, not only that group directly concerned with building, operating, staffing and managing our hospitals but also the legal profession, industrial and labor groups, farm organizations and county and municipal associations.

On January 10, 1946, the Governor of Kansas issued his formal approval of the Kansas Hospital Commission. At the same time, the State Board of Health was designated to conduct a survey of all hospital facilities in Kansas. This survey later became the basis under which Kansas was to participate in the Federal Hospital Survey and Construction Act, the Hill-Burton bill, which became an active federal statute in August 1946.

In June, 1947, the Kansas Legislature under H.B. 399 passed the enabling act whereby the State Board of Health under its Division of Hospital Facilities and the Hospital Advisory Council could direct and counsel the communities in their effort to secure more and better hospital facilities. H.B. 67 Hospital Licensing Act, a related statute, was made effective at the same time and became operative July 1, 1948. A little more than a year and a half has passed and there is already ample evidence of the good effect on both the type and quality of hospital facilities and service in Kansas.

Kansas is making distinct progress in the program of expansion of hospital facilities. In spite of high construction costs and the shortage of building material, community pride and necessity have stimulated an estimated projected expenditure of between 20 to 25 million dollars over the next five years for additions, improvements, and new hospital construction. Bonds exceeding seven million dollars have been voted by counties and cities over the state, earmarked by law for the purpose of hospital and health center construction. A considerable part of this is in rural areas where needs are maximum.

A sampling survey was made through the members of the Hospital Survey Committee disclosing some facts of interest:

1. Urban areas generally have adequate hospital facilities.
2. During the past 60 days little difficulty is reported in securing hospital accommodations.
3. No instance has been reported of high hospital costs keeping patients from needed hospital care.
4. No reported instance of a doctor not enjoying staff privileges in his community hospital.
5. Patient census as of January 5, 1949, shows hospital beds in sampled areas occupied 98 per cent capacity.

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For some reason, the goose egg stands for zero . . . nothing.

The nest egg, however, stands for a tidy sum of money, set aside for your own or your children's future.

It's hardly necessary to ask you which you'd prefer.

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6. Almost without exception hospitals provide patients with drugs, laboratory service, x-ray diagnostic and x-ray treatment.

Comment: Very few doctors report having difficulty in securing hospital accommodations for patients needing care. Hospitals in Kansas, both rural and urban, are filled beyond a percentage of safety. We must have more general hospital beds. Hospitals through the dispensing of drugs, laboratory and x-ray services and billing same direct to the patient would seem to be invading the field of the pharmacist, the pathologist and the x-ray technician as well as the physician. High per diem hospital rates have not prevented patients from accepting care.

I want to thank the members of the Hospital Survey Committee for suggestions and response to the questionnaire. May I suggest since the original purpose of a Hospital Survey Committee has passed that a committee under the heading Hospital and Physician Relations might serve a most useful purpose.

Respectfully submitted,

John L. Grove, M.D., *Chairman.*

INDUSTRIAL MEDICINE

J. W. Spearing, Chr., Columbus; H. O. Anderson, Wichita; J. L. Beaver, Wichita; G. R. Combs, Leavenworth; C. W. Hall, Hutchinson; J. G. Hughbanks, Independence; H. L. Regier, Kansas City; F. N. White, Russell.

To the House of Delegates:

Although numerous details have been discussed by your Committee on Industrial Medicine, it is the opinion of your chairman that the House of Delegates will be more interested in a statement of general policy than a recitation of individual projects. For the present there are three major objectives under consideration.

The first of these is to increase the understanding of the profession as to good practices in industrial medicine and to give the membership of the Kansas Medical Society a perspective of the responsibilities medicine has in this field, as well as to outline acceptable procedures concerning the relationship between industry and the private practice of medicine. Your committee is planning graduate courses related to this subject, to be given at the University of Kansas, and is recommending circuit courses. An attempt will be made to stimulate interest in component societies whereby scientific programs may be presented on industrial medicine. Articles are being prepared for publication in the Journal of the Kansas Medical Society. Also under consideration is the possibility of holding a one-day conference in some centrally located city in Kansas to which all members will be invited.

A second objective pertains to the correlation of the work being done by the State Board of Health, through its Division of Industrial Health, and by

this committee. A forward stride was taken at a recent meeting of this committee where the new director of this division of the Board of Health was introduced. It is the opinion of your committee that considerable progress has been made in this direction and that because of the understanding that has been reached much good may be accomplished. Under this category may also be mentioned the fact that your committee is beginning a study of the development of proper laws governing industrial health. The committee is now in the process of obtaining information from other states and will at some time in the future submit to the House of Delegates a long range program involving the revision of antiquated laws currently on the statute books.

The third objective involves a series of meetings to be held by your committee, first with labor and then with management, in an attempt to reach an agreement with reference to policies concerning industrial medicine. This program was planned some years ago, but until quite recently had not progressed beyond the point where your committee had drawn up a tentative outline. At the time this report is written, negotiations are under way for early meetings. If these have been held at the time of the House of Delegates meeting, your chairman begs leave to submit a supplementary report covering this point. If these meetings have not been accomplished, they will be during the summer. Preliminary conferences with representatives of labor and with representatives of industry have indicated considerable hope for success. When these groups come to agreement, the program will then be submitted to the medical profession in an effort to interest the doctors in this state in more completely discharging their responsibilities both to labor and to management in the field of industry.

Respectfully submitted,

J. W. Spearing, M.D., *Chairman.*

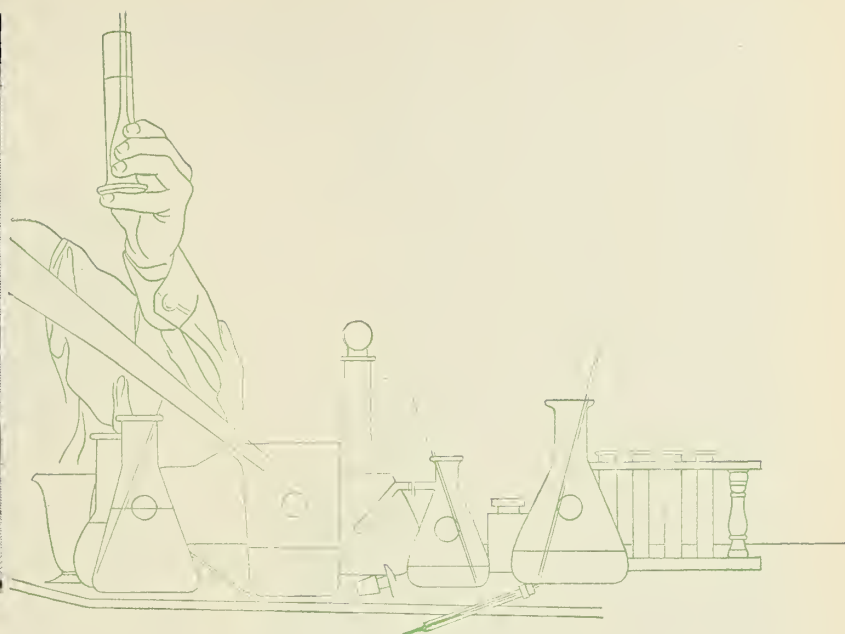
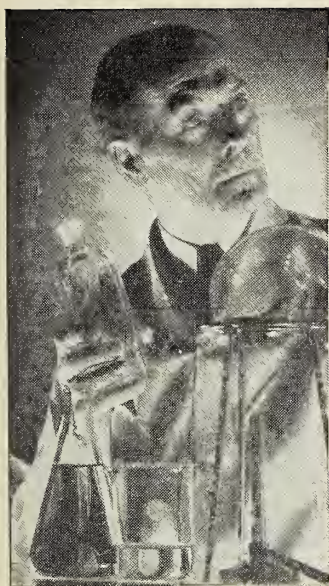
MATERNAL WELFARE

Porter Brown, Chr., Salina; Frances Allen, Newton; D. A. Anderson, Salina; L. A. Calkins, Kansas City; G. E. Cowles, Wichita; P. R. Ensign, Topeka; H. M. Floersch, Kansas City; H. S. O'Donnell, Ellsworth; R. E. Pfuetze, Topeka; W. L. Pratt, Leavenworth; R. A. Schwegler, Lawrence; R. A. West, Wichita.

To the House of Delegates:

The Maternal Welfare Committee makes the following report to the president of the Kansas Medical Society: the maternal mortality rate for the year just closed is 0.9 as against a rate of 1.0 in 1947. This is the lowest mortality rate on record in the state of Kansas. Had the 1940 rate prevailed in 1948, there would have been 158 maternal deaths instead of the 38 which occurred. Had the 1930 rate prevailed, there would have been 294 deaths instead of the 38. The chief cause of death was blood loss.

The Maternal Welfare Committee makes an effort to promote one special project each year. During



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1948 direction was given to creating interest over the state in Mothers' Classes. The YWCA of Kansas cooperated in setting up classes, giving maternal welfare publicity and in furnishing facilities to conduct classes in their buildings. The rural community YWCA's conducted several classes in villages about the state. In fact, there were more YWCA requests for classes than there were teachers and equipment to carry them through. The Maternal Welfare Committee satisfied itself that the women of Kansas want this information. It also satisfied itself that the method of getting information to them is not satisfactory.

The Committee suggests that the University of Kansas Medical School continue its interest in establishing classes which not only cover the details of maternal care but also include some of the elementary information for the care of the general health of the mother and her infant. The committee is of the opinion that to make such a program as successful as it should be, the medical school will need, through an Extension Service, to supply teachers in accessible localities over the state. If the medical school cannot see its way clear to carry such a program, then we suggest that it be handled by the State Board of Health which has given most valuable service and cooperation in the limited program carried this year.

A problem of immediate concern to the committee is the rise in percentage of Caesarian sections with an accompanying rise in the number of ruptured uteri. A survey of one community in Kansas shows that the rate of Caesarian section is well over three per cent. There is no reason to think that this particular community had a higher percentage than other communities of the state which means that there were at least 1350 Caesarian sections done in Kansas last year. In this same community there were five ruptured uteri. Pathological examination of the scar tissue in each of them demonstrated that the woman who is sectioned is permanently crippled for the initial scar is incapable of healing to make subsequent pregnancy safe from the danger of a ruptured uterus.

In the light of this evidence and of the fact of a rising percentage of sections and the mounting number of crippled women because of it, the Maternal Welfare Committee makes the following suggestions:

1. That there be prepared, either by the Kansas Medical Society or by the State Board of Health, a report blank for the use of physicians and hospitals over the state. This report to contain: (a) An accurate history of the patient including physical and laboratory findings. (b) A list of indications for the section. (c) A description of the type of operation employed.

2. That the report be made in duplicate—one copy to be filed with the State Board of Health at the time of the recording of the birth and the second to be given to the patient to pass on to the physician into whose hands she may fall at some later date.

The committee is of the opinion that such procedure would protect the initial operator and make plain his reason for doing the section. It would protect the patient who may later be a candidate for a second section and a possible ruptured uterus. And it would aid any physician who might follow in giving the woman the best possible care to meet her particular problem.

The committee wishes to express its sincere appreciation to the YWCA and its health department for its splendid cooperation in the Mothers' Class project, to Dr. Ensign and Dr. Gouldman for their helpful suggestions and material, to Oliver Ebel for his prompt and efficient help in matters of business and detail and to the doctors all over Kansas who have worked in their local communities to assist the committee in all of its efforts in maternal welfare.

The committee has asked the cooperation of all the ministers of Kansas in their Mother's Day programs to call attention to the need for education to combat maternal deaths.

Respectfully submitted,

Porter Brown, M.D., *Chairman.*

MEDICAL ASSISTANTS

C. O. Merideth, Jr., Chr., Emporia; C. S. Brady, Atchison; G. A. Chickering, Hutchinson; J. W. Manley, Kansas City; R. H. Maxwell, Wichita; C. C. Nesselrode, Kansas City; R. R. Sheldon, Salina.

To the House of Delegates:

The committee has held no meetings during the past year but has kept in touch with Kansas Medical Assistants' Society activities by correspondence. Members of the committee attended a number of the society meetings.

The organization is completing a most successful year under the presidency of Miss Regina Lewis of Wichita. Membership has been increasing during recent years, and there are now 478 members throughout the state.

An all-day medical assistants' clinic was held at Winfield last November, primarily for those in that section of the state but open to all members. There was good attendance and evidence of great interest in the work of the society. Particularly encouraging was the support and cooperation of the doctors of Winfield and Cowley County.

The annual meeting of the K.M.A.S. will be held in Topeka on Sunday and Monday, May 8 and 9, 1949, with members of the Shawnee County group as hostesses. The meeting will close with the installation of the new president, Mrs. Faye Bullard,



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Hutchinson.

Your committee wishes to approve the work of this organization and to ask all members of the Kansas Medical Society to give it their support.

Respectfully submitted,

C. O. Merideth, Jr., M.D., *Chairman.*

MEDICAL ECONOMICS

G. E. Kassebaum, Chr., El Dorado; A. C. Armitage, Hutchinson; P. E. Conrad, Hiawatha; T. Dechairo, Westmoreland; H. H. Hesser, Kansas City; J. H. Lathrop, Smith Center; G. D. Marshall, Colby; P. A. Pettit, Paola; J. W. Randall, Marysville; R. Sohlberg, Jr., McPherson; H. L. Songer, Lincoln.

To the House of Delegates:

The Medical Economics Committee has carried on by mail this year. The two major projects of Medical Economics have been the Council's problem mainly, veterans' program and socialized medicine, and not in our hands.

We have attempted to investigate and get comment on the Kansas High School Athletic program. This year they gave up their mutual insurance program and signed up with a commercial insurance company of Denver, Colorado. Most of you are familiar with the agreement and its limitations. The company claims the fee schedule is based upon the average of the state industrial insurance schedules now in use in the United States. It appears they must be basing this statement on minimum fees of such groups, as it is certainly under the one used in Kansas.

The main concern of the physicians in this matter comes from the fact that the parents of the athletes are led to believe or want to believe that the children are fully covered by the policy. This of course is far from correct where any major accident is involved. However, it is better than former plans and for the premiums charged is probably as much as can be expected.

One objection has been the fact that injuries are frequently cared for under this program by persons other than doctors of medicine. Under circumstances existing at present it appears that nothing can immediately be done in this regard.

The company has expressed a desire for comment from the medical profession on ways of improving the contract and we are compiling such suggestions as have been made by the committee members to forward to them.

Further than this the committee has been idle.

Respectfully submitted,

G. E. Kassebaum, M.D., *Chairman.*

MEDICAL SCHOOLS

Maurice Snyder, Chr., Salina; R. G. Ball, Manhattan; F. C. Beelman, Topeka; J. A. Blount, Larned; H. H. Jones, Winfield; H. P. Jones, Lawrence; D. N. Medearis, Kansas City; E. S. Miller, Kansas City; M. B. Miller, Topeka; E. L. Mills, Wichita; F. J. Nash, Kansas City; R. E. Speirs, Dodge City.

To the House of Delegates:

Last year the Committee on Medical Schools was mostly active in a program designed to foster a better spirit of cooperation and understanding between the Kansas Medical Society and the University of Kansas Medical Center. Thanks to all concerned your committee feels that this has been more than accomplished. All of its recommendations have been realized. A committee from the medical school to join with the Society Committee on Medical Schools has been selected and several joint meetings have been arranged with much mutual benefit to both the Society and the school. Under the able leadership of Dr. Franklin D. Murphy, the newly elected full time dean, the medical school has in a few months planned and is carrying out a forward policy which is receiving the enthusiastic support of the entire faculty and members of the profession throughout the state.

The medical school has received active support from physicians and organizations of the Medical Society towards realization of the school's financial requirements, and an adequate budget (\$4,000,000) for expansion of facilities of the institution has recently (February 18, 1949) been passed by the Kansas legislature and signed by the Governor.

This year your committee has met on three occasions. At each of these sessions the committee has its individual meeting followed by a joint meeting with either the advisory committee of the medical school or with the postgraduate director of the school. Through the efforts of the committee the "Kansas Medical Society Day" at the medical center was conceived. Its first meeting was held March 7, 1949, the program being put on by members of the Kansas Medical Society for the junior and senior medical students, and it is planned for an annual observance.

The postgraduate sub-committee under the chairmanship of Dr. H. H. Jones has been active as usual in preparing postgraduate courses to be given at the school and has planned a nine-months circuit course for the year 1950. The committee again thanks the faculty members of the University of Kansas graduate school for their time and efforts spent in making these postgraduate courses available to the physicians of the state.

Respectfully submitted,

Maurice Snyder, M.D., *Chairman.*

MENTAL HEALTH

E. D. Greenwood, Chr., Topeka; P. E. Davis, Topeka; R. L. Drake, Wichita; T. L. Foster, Halstead; L. W. Hatton, Salina; C. C. Hawke, Winfield; J. A. Holmes, Lawrence; W. C. Menninger, Topeka; W. F. Roth, Jr., Kansas City.

To the House of Delegates:

Following the passage by Congress of The National Mental Health Act, in 1946, and the designa-

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tion by Governor Carlson under this Act of the Kansas State Board of Health as State Mental Health Authority, the Board of Health sought the advice and counsel of the Kansas Medical Society. In response to this, and because the Society desired to be kept informed of federal legislation and statewide activity in the area of mental health, it, on October 18, 1947, formed a Committee on Mental Health.

After a study of the literature on the National Mental Health Act, the committee met for the first time February 13, 1948. Dr. Floyd Beelman, executive secretary, Kansas State Board of Health, discussed the implications of the Act and outlined some of the basic essentials of a statewide program of mental hygiene. The committee approved unanimously the creation of a Division of Mental Hygiene in the State Board of Health and, following requests, voted to serve as an Advisory Council to the State Board of Health and the Institutional Division of the State Department of Social Welfare.

There followed a discussion of the psychiatric facilities of Kansas as a result of which two subcommittees were established; (1) to study psychiatric hospitals and clinics, William F. Roth, Jr., M.D., chairman; (2) to study admission and commitment procedures to mental hospitals, Thomas L. Foster, M.D., chairman.

The second meeting of the committee occurred on April 18, 1948. Dr. Thomas Foster reported on his investigations into Kansas commitment laws and those of other states. The committee endorsed the proposal that the model commitment laws of Arkansas be studied with the Executive Committee of the Probate Judges' Association of Kansas.

Dr. William F. Roth, Jr., presented the findings of his survey of Kansas mental hospitals along with a comparison of the status of similar hospitals of other states. The following recommendations of this subcommittee were then approved by the committee as a whole:

(1) All means should be taken to promptly raise the standards of Kansas mental hospitals.

(2) To improve the psychiatric facilities of the University of Kansas Medical Center, the Kansas Legislature should be urged to appropriate at least \$460,000 to match \$230,000 of Hospital Construction Act funds which had been set aside by the Kansas Hospital Advisory Council to construct a psychiatric hospital.

(3) For better medical service, the Kansas Receiving Home for Children at Atchison should be moved to the neighborhood of the Medical Center at Kansas City.

(4) Guidance centers and mobile guidance teams should be gradually developed in Kansas.

Dr. Charles C. Hawke was designated to present

resolutions pertinent to the recommendations of the two subcommittees to the Society's House of Delegates. At the same time, similar resolutions were sent by Dr. Edward G. Greenwood, chairman, to approximately 75 organizations in Kansas with the request that they assist in any future legislative action upon these measures. Twenty-five favorable replies were obtained, none opposed.

On June 13, 1948, the Committee on Mental Health met for the third time. Dr. Hawke reported that the above resolutions had been approved by the House of Delegates. Dr. Foster noted that the Probate Judges' Association felt the Arkansas commitment statutes would be invalid in Kansas. He further stated he had arranged for a full study of the Kansas laws with the Kansas Psychiatric Society and members of the Legal Division of the State Department of Social Welfare.

The meeting concluded with the passage of this motion: "That this committee endorse the establishment of guidance centers in the more populated areas of Kansas, and that these guidance centers be organized under the direction of the Division of Mental Hygiene of the State Board of Health as rapidly as possible, with the assistance of and after approval by the component medical society involved."

The committee gathered for the fourth time on September 23, 1948, at the State Training School, Winfield, with members of the Society's Maternal and Child Health Committee. The morning was devoted to an inspection of the institution. A joint meeting was held in the afternoon at which Dr. Hawke presented a paper reviewing the effects of sterilization and castration upon the patients.

In a separate meeting of the Mental Health Committee it was reported that a preliminary draft of a new set of commitment statutes had been made by Mr. Charles McCoy of the State Department of Social Welfare with the collaboration of Drs. Thomas Foster and Lloyd Hatton. This would be offered for criticism to the Kansas Psychiatric Society the next day and the Probate Judges' Association in November.

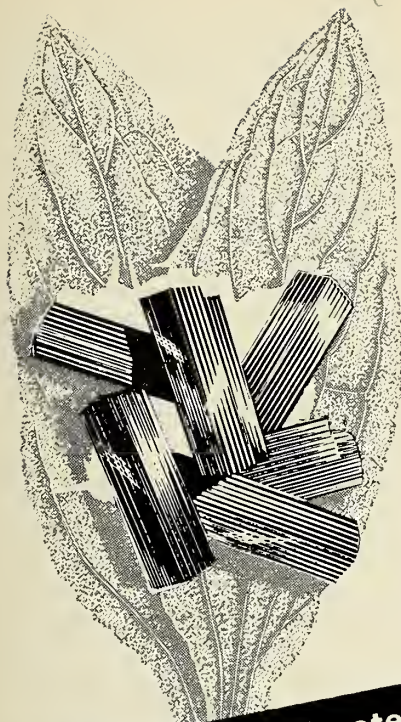
Final arrangements were made for Dr. Edward Greenwood, chairman, to present the deliberations and recommendations of the committee to a meeting of representatives of all county medical societies in the near future. In addition, the hope was expressed that this committee might meet with the House Ways and Means Committee during the present session of the Kansas Legislature.

Respectfully submitted,

E. D. Greenwood, M.D., *Chairman.*

NECROLOGY

E. C. Duncan, Chr., Fredonia; O. D. Walker, Salina; C. F. Young, Fort Scott.



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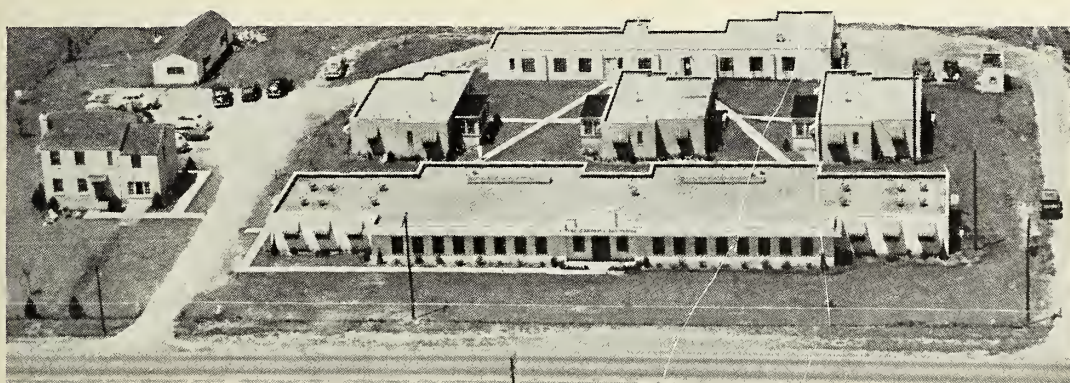
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To the House of Delegates:

The Committee on Necrology submits the following list of members of the Kansas Medical Society whose deaths have been reported since the last meeting of the House of Delegates:

Name	Age	Date	Residence
Dr. Carl J. Cramm	72	April 14	Russell
Dr. Robert F. Campbell	54	April 19	Iola
Dr. William J. Walker	72	April 29	Topeka
Dr. Cornelius O. Anderson	74	April 30	Concordia
Dr. James A. Fulton	68	May 9	Kansas City
Dr. William N. Johnson	94	May 11	Columbus
Dr. Alva L. Cowden	73	May 15	Pittsburg
Dr. James G. Janney	64	May 26	Dodge City
Dr. Lewis G. Allen	57	May 28	Kansas City
Dr. Francis M. Wilmer	77	June 22	Winfield
Dr. George A. Landes	67	June 24	Parsons
Dr. Lewis S. Fisher	65	June 26	Kansas City
Dr. Louis M. Tomlinson	59	July 1	Harveyville
Dr. Edward L. Asbell	75	July 3	Kansas City
Dr. William F. Bowen	75	July 25	Topeka
Dr. Eben S. McIntosh	81	Aug. 7	Burns
Dr. Howard N. Moses	74	Sept. 10	Salina
Dr. Leslie Leverich	82	Sept. 14	Kansas City
Dr. Cyril E. Sheppard	63	Sept. 14	Larned
Dr. Oscar F. Marcotte	74	Sept. 23	Topeka
Dr. Canada A. Beeler	75	Oct. 1	Cherryvale
Dr. Jesse V. Ferrel	77	Oct. 5	Louisburg
Dr. William J. Stewart	79	Oct. 21	Frankfort
Dr. Jacob F. Shelley	83	Oct. 23	Elmdale
Dr. Romeo C. Harner	80	Nov. 4	Howard
Dr. Robert L. Ferguson	74	Nov. 5	Arkansas City
Dr. Ernest W. Tallman	72	Nov. 12	Gaylord
Dr. Franklin E. Schenck	92	Nov. 19	Burlingame
Dr. Frank J. Walker	74	Dec. 1	Wichita
Dr. Emery G. Coyle	59	Dec. 11	Coffeyville
Dr. Wayne B. Granger	56	Dec. 26	Emporia
Dr. Harry C. Brown	74	Dec. 19	Stockton
1949			
Dr. Xenio F. Alexander	67	Jan. 7	Dodge City
Dr. Cleo D. Bell	45	Jan. 16	Pittsburg
Dr. John S. Betz	39	Jan. 18	Kansas City
Dr. August P. Fleckenstein	71	Jan. 28	Selden
Dr. Eugene M. Wiedenmann	59	Jan. 29	Topeka
Dr. Charles H. Mielke	75	Jan. 30	Kansas City
Dr. James G. Sandidge	78	Feb. 6	Mulberry
Dr. Paul R. Webster	51	Feb. 16	Leavenworth
Dr. Donald R. Davis	36	Mar. 10	Dodge City
Dr. Jay Baird	78	Mar. 18	Coffeyville

Respectfully submitted,

E. C. Duncan, M.D., *Chairman.*

PUBLIC HEALTH AND EDUCATION

G. R. Hastings, Chr., Garden City; H. R. Barnes, Hutchinson; M. L. Bauman, Parsons; P. L. Beiderwell, Belleville; H. S. Blake, Topeka; V. E. Brown, Sabetha; N. A. Burkett, Council Grove; D. D. Carr, Topeka; R. D. Grayson, Overland Park; D. T. Loy, Great Bend; O. L. Martin, Salina; R. H. Moore, Lansing; L. W. Reynolds, Hays; W. G. Rinehart, Pittsburg; C. E. Robison, Hoisington; C. O. Stensaas, Arkansas City.

To the House of Delegates:

The Committee on Public Health and Education has not met, owing to the fact that it seemed impossible to get a meeting of the key men of the Society to formulate a type of program and policies that they wished this committee to carry out.

Respectfully submitted,

G. R. Hastings, M.D., *Chairman.*

RURAL HEALTH

C. M. Barnes, Chr., Seneca; S. A. Anderson, Clay Center; L. E. Beal, Fredonia; H. S. Bennie, Almena; D. C. Chaffee, Abilene; R. M. Daugherty, Meade; J. C. Dysart, Sterling; J. T. Fowler, Osawatomie; H. L. Graber, Nickerson; J. E. Henshall, Osborne; A. J. Horejsi, Ellsworth; R. E. Jordan, Holton; Ray Meidinger, Hiawatha; R. E. White, Garnett.

To the House of Delegates:

This largest committee of the Kansas Medical Society consisting of 14 members, well distributed geographically throughout this rural state, is proud of the accomplishments of the Kansas Medical Society, the University of Kansas Medical School, and the people of Kansas for the splendid progress in rural health improvement plans made during this past year. The efforts of Doctors Murphy, Peck, and Davidson in behalf of our Society, medical school, and Rural Health Committee are extremely gratifying. The Kansas Plan for rural health improvement was approved by our rural people and the politicians representing the people saw to it that proper legislative appropriation was made to establish the framework of improved rural health in Kansas. Many of the primary aims and objects of the Rural Health Committee resolutions will be realized as the medical center expansion program gathers momentum.

The Rural Health Committee is urging Blue Cross and Blue Shield to accelerate the enrollment program of voluntary health insurance so that many rural people desiring to participate may be received into the program.

Your present Rural Health Committee has reiterated the resolutions and deliberations of the preceding committees in its avowal that definite lectures by general practitioners be given the medical students. We definitely feel that the need and trend, yes, the demand from the people is for our medical schools to graduate more general practitioners and a much less percentage of men who would immediately enter a specialty. We feel that it is the present overspecialization in the practice of medicine that has caused such widespread unhappiness amongst our citizenry concerning medical service. We feel the production of more general practitioners would much better solve the problem of improved medical care than would national compulsory health insurance. In fact, we definitely feel that national compulsory health insurance would probably result in even more specialization, so that it would be more difficult for the bedfast patient to secure a doctor to visit him in his home. Not only do we feel this would be true in the rural areas but also in the urban.

Our most recent committee meeting was a joint meeting with the Curriculum Committee of the University of Kansas Medical School. This joint meeting held at the request of the Curriculum Committee of the medical school was attended by eight of our

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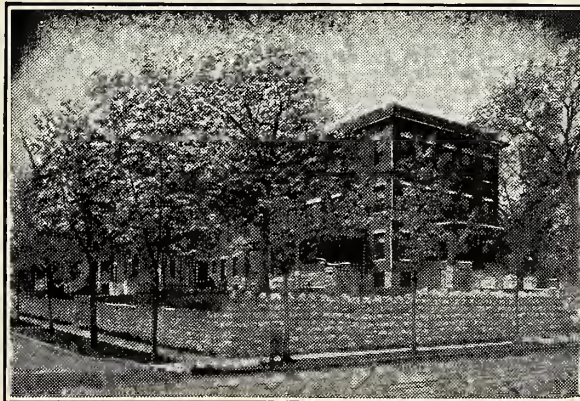
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Medical Director

HERMON S. MAJOR, JR.
Business Manager

committee members. Doctors Barnes, Beal, Chaffee, Dysart, Horejsi, Jordan, Meidinger, and White were present at this meeting held at the University of Kansas Medical Center on Sunday, March 20, 1949. At this joint meeting, Dr. Herbert C. Miller, chairman of the Curriculum Committee, requested advice of our committee concerning the new general practice residency which will begin in July of this year. At present, six doctors plan taking the general practice residency. The Curriculum Committee requested the Rural Health Committee to compile a list of specific practice procedures absolutely necessary in general practice. An outline of emergency training procedures needed in general practice was also requested. It was further requested that the Rural Health Committee present to the Kansas Medical Society the problem of selecting a panel of qualified doctors in Kansas to guide medical students in the externship training program. Our Rural Health Committee made suggestions concerning the need for general practice lectures in the regular medical school curriculum in addition to participation by the general practitioners of Kansas in the externship training program.

We, of the Rural Health Committee of the Kansas Medical Society, are in favor of *more speed in action* in resolving the triangular responsibility problem of health service improvement which includes physicians, medical schools, and educational facilities, and the people composing the communities. It will take months and years to build more hospitals and increase the graduating capacities of our medical schools, but we can start influencing more medical students to become general practitioners at once.... NOW!

Respectfully submitted,

Conrad M. Barnes, M.D., *Chairman.*

STORMONT MEDICAL LIBRARY

A. K. Owen, Chr., Topeka; C. M. Alderson, Dodge City; E. Beebe, Olathe; A. R. Chambers, Iola; E. L. Kalbfleisch, Newton; E. J. McCreight, Liberal; F. A. Moorhead, Neodesha; W. L. Valk, Kansas City.

To the House of Delegates:

It might be of interest to the Kansas Medical Society and the Council to have a short review of the origins of the Stormont Medical Library. It will explain the existence of the Stormont Library Committee, the why of it, and its activities, and even lack of them.

The Stormont Medical Library was donated to the State of Kansas by the late Mrs. Jane C. Stormont, widow of the late David W. Stormont, M.D., in the year 1889. The legislative bill accepting it was approved March 1, 1889, and it says in part:

"...Interest from the principal sum (\$5,000), shall be expended from time to time for books, charts and magazines relating to medicine and sur-

gery, and kindred and associated subjects, which books, charts and magazines shall be purchased from time to time by such person, board or officer of the State of Kansas as may be provided by law, but such purchases shall be made upon the recommendations of the Library Committee of the Kansas Medical Society... and such purchases shall be a part of the library of the State of Kansas, and shall be known as the Stormont Medical Library, and shall be forever kept and maintained with the state library in the state capitol building, to be designated by law, and which library shall be forever free for the people of Kansas, and particularly the medical profession of the state."

The entire bill is much longer. It, together with a copy of Mrs. Stormont's will, might be published in whole by the Journal of the Kansas Medical Society. Anyhow, 60 years ago, this library came into being. For most of that time, because it was rather poorly located in a rather inaccessible alcove of the state library, few knew about it, or ever saw it, or used it. In the past 30 years it has had no income save interest from the original fund.

Through the good offices of Chief Justice Harvey of the Supreme Court, and other Justices (the library is much used now by lawyers), a small appropriation was obtained from the 1947 legislature. Without this, or some similar sum from other sources, the library could not exist. Interest from the endowment fund, in the light of today's investment return, would hardly produce "The Annals of Surgery." With this state help, and still with the good offices of Judge Harvey, the library was moved into new quarters. This is a very pleasant suite of rooms in the southwest corner of the state house on the third floor. There are two well appointed reading rooms and a stack room. Another small appropriation has been asked from the 1949 legislature, and it will likely be approved before this is published.

The state librarian, Miss Louise McNeal, and the assistant librarian in charge of the Stormont Section, Miss Garnett Mottice, have given uncounted hours (much of it overtime without pay) to establish the library in its new quarters and to get it into efficient operation. The state of Kansas owes them much for their interest and their skillful organization of the library.

With this brief background, we come to interests of the Kansas Medical Society and the Stormont Library Committee. And this is what we find.

The Medical Society does not own the library.

They have no power to make purchases.

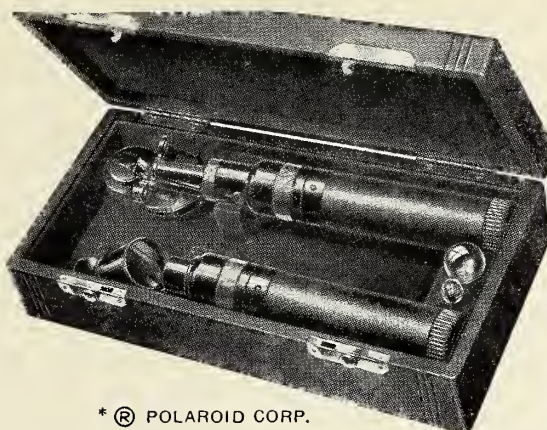
They have no power to direct policies.

Miss McNeal's request to the library committee is "for advice on what books and journals to purchase, and help in weeding out obsolete material." I am

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Karl J. Waggener, M.D.

Wendell T. Wingett, M.D.

sure she would welcome aid in publicity and bringing knowledge of the library to a much greater number of people. But the committee does not have much that it can do. It does not need to be a large committee, and it is not overworked, even at the best. Perhaps some committees haven't worked at all.

There is another medical library in the state, also free for the use of the medical profession, the library in the University of Kansas Medical Center in Kansas City. Because of its association with the medical school, it is better financed and more widely known. Only recently (January 1949), the Council of the Society directed the editor of the *Journal* to send all books sent in for review to the medical library in Kansas City after the review was written. Heretofore they have gone to the Stormont Library. However, through arrangements made by the executive secretary of the Society, many books for review are sent in duplicate, and the second copy goes to Stormont Library.

This duplication of libraries does limit, somewhat, the development of Stormont on a state basis. As has been mentioned, lawyers now use Stormont more than physicians. It is my opinion that the physicians in Shawnee County might use it more, could and will use it more, if they know more about it. The State Board of Health has given a considerable number of books designated for use of the Maternal and Child Health Division of the State Board and the physicians of the board, the state nursing department, and the lay associates of the board are making an increasing use of the library. Physicians of the Veterans Administration Hospital and those of the Menninger Foundation use it quite extensively.

Students in state schools working for advanced degrees use it. School teachers over the state use it for themselves and for their classes. (This last is a doubtful function of the library; pupils in high school do not have enough information at their disposal to use it to much advantage.)

Parents in and about Topeka are beginning to use the library for informative reading about child care and family raising. The people of Kansas are using the library more than the medical profession, much more.

What about the Stormont Library Committee? I am sure that it should be continued. Its prescribed duties are not many. The committee should not be a large one, but it does have a responsibility. Choosing books and magazines, when there are so many to choose from, requires more thought than work. Not only does Miss McNeal want recommendations for such purchases from this committee, but she is anxious to have lists from any physician in the state. If these requests cannot be immediately purchased, they will be filed for future consideration. This fact

must be kept in mind—if state appropriations should stop, other monies must be obtained—or the library cease to function.

The president of the Society, Dr. O. W. Davidson, has suggested that this committee, or another, be empowered to write a history of the Kansas Medical Society. None exists to date. This is a very pertinent suggestion. A history should be written, the sooner the better. There are physicians in our number who have many of the earlier stories of the Society in their memories. But they are not written, and much of this material may be lost for all time unless written very soon.

The data for this history is in the State Historical Society, the newspapers of the state, and in the minds of those who still remember. It will be a job to dig it out and write it. And it will cost some money. There will be secretarial work and other small expenses. Perhaps it would be \$1,800 to \$2,400 a year for three or four years. This is a pure guess; what really will be needed will have to be discovered by trial. But it will cost some money, and be worth it many times over. There will be a lot of work to do and every year that is lost will make it just that much harder to do. It should be begun now, whether by the Stormont Committee or by another will be a matter for Society and Council action.

The Stormont Committee has had one meeting this year, February 19, 1949. Besides the chairman, Dr. E. L. Kalbfleisch of Newton and Dr. W. L. Valk of the University Medical Center were present. It was the opinion of these three that a small Stormont Committee should be maintained. They could do lots of good. An energetic chairman could invent new ways for helping expand the scope of library use. And these three are very definitely of the opinion that a History Committee be authorized to begin work at once. Dr. Davidson made these suggestions to the committee regarding this matter. Besides their activity to promote Stormont Library they might consider:

A history of the Kansas Medical Society;

Inauguration of a page in the *Journal* to carry items of historical interest;

Present outstanding men of the Kansas Medical Society to the younger members. Perhaps this could be a part page in the *Journal*.

A small Stormont Committee should be maintained and a History Committee authorized to begin work at once.

Respectfully submitted,

A. K. Owen, M.D., *Chairman*.

STUDY OF HEART DISEASE

P. W. Morgan, Chr., Emporia; D. R. Bedford, Topeka; P. M. Clark, Jr., Independence; K. L. Druet, Salina; C. W. Erickson, Pittsburg; L. H. Leger, Kansas City; F. J. McEwen, Wichita; H. T. Morris, Topeka; G. L. Norris, Winfield; H. W. Palmer, Wichita; L. O. E. Peckenschneider, Halstead; J. M. Porter, Concordia.

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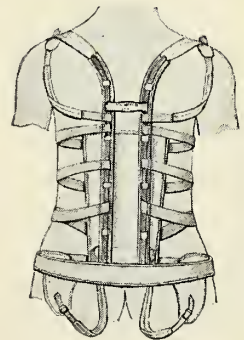
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To the House of Delegates:

The committee held several meetings, and the year's work included several projects, none of which was more important than another.

The review of, the collection of, and the follow-up on abnormal cardiac silhouettes detected by the State Board of Health's mobile photofluorographic unit was continued.

This activity was started with the committee's reorganization after the war. The committee suggested that a member of the medical school staff, appointed by the dean, be assigned to make a more intensive study of this material and through funds secured by Dr. F. C. Beelman of the State Board of Health this has been made possible. It was thought such integration of activity would not only insure a more careful follow-up but would provide continuous data for dissemination to more members of the profession.

An all-day meeting was arranged through cooperation of the State Board of Health, the medical school and Winter Veterans Hospital staff at the latter institution in December. All interested members of the Kansas Medical Society were invited and about 100 attended.

A four-day advanced refresher course in cardiovascular diseases was arranged by the committee but financed by the matriculants. This project had been carried out for three years prior to the war. Dr. David Scherf of New York City was the instructor and the course was given in Emporia in October.

The committee arranged a combined lay-professional meeting of interested persons from over the state in Emporia in January, and those who attended organized the Kansas Heart Association. By invitation, Dean Franklin D. Murphy presided at the meeting and through the gratuitous assistance of Mr. Clarence V. Beck, Emporia attorney (former Attorney General), all of the legal prerequisites for affiliation with the American Heart Association were met and the Kansas Heart Association now exists as an incorporated organization.

The members of the committee feel that this is an important accomplishment and hope that many county chapters of the state organization will soon be formed. Under the present American Heart Association plan, all affiliate groups must include medical and lay persons. A broader sociological viewpoint is thus maintained and the plan has many other advantages such as a larger controlled outlet for authentic educational material which the public desires.

A subcommittee was assigned to work with Dr. F. C. Beelman of the State Board of Health and with the Tuberculosis and Health Association to integrate activities that appeared to be common to the three groups.

The committee assisted in securing a scientific ex-

hibit on cardiovascular disease for the annual meeting in Topeka.

The committee made free use of the talents and facilities of the central office in Topeka and appreciated the pleasant willing attitude and many things done by Mr. Ebel and his staff.

The committee is particularly indebted to and wishes to express again its appreciation for assistance and complete cooperation at all times to the following: Dr. Franklin D. Murphy, dean, and members of the faculty of the School of Medicine; Dr. F. C. Beelman of the State Board of Health and members of his staff; the State Tuberculosis and Health Association; and the Winter Veterans Administration Hospital administrator and members of the professional staff.

Respectfully submitted,
Philip W. Morgan, M.D., *Chairman*.

VENEREAL DISEASE

J. P. Berger, Chr., Wichita; D. E. Bux, Columbus; J. K. L. Choy, Topeka; M. H. Delp, Kansas City; L. E. Filkin, Concordia; M. Hyde, Ottawa; H. E. Neptune, Salina; J. F. Nienstedt, Beloit; O. F. Prochazka, Liberal; G. S. Voorhees, Leavenworth.

To the House of Delegates:

The activities of the Committee on Venereal Disease are summarized as follows:

1. After studying the literature, listening to the recordings and reviewing the entire problem concerning Columbia University—Public Health Service Venereal Disease Case Finding Radio Program recordings, this committee concurred in the opinion of at least three qualified syphilologists and many interested and capable physicians that the entire program was most satisfactory, except the statement of facts with reference to treatment. It is believed "more harm than good" would follow the use of these recordings. Until such times as these statements are changed to satisfactory ones and statistical results supporting the program used elsewhere are available, this committee tables the project.

2. The Supreme Court Case of two Wichita girls being picked up and held on "Request for Intern" as venereal disease suspects has been interpreted and clarified by the Wichita city attorney's office. A clear understanding of the relationship of time in testing and the final diagnosis has been achieved at all levels of authority as well as the rules and regulations governing the same.

3. A review of the problem of syphilo-therapy at state level with particular reference to penicillin is being continued from last year. A study group is formulating "acceptable" rather than "recommended" summary as to therapy with special reference to the minimum amount of drugs used. When accepted by the general committee, it is proposed these minimum

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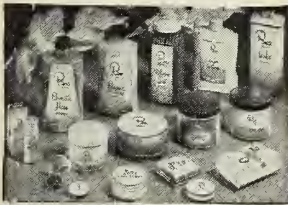
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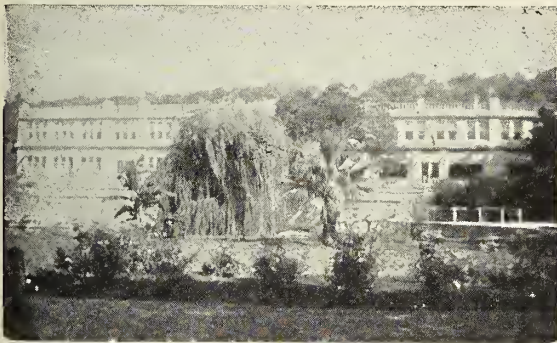
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acceptable standards be published in the state medical journal.

4. This committee, being convinced of the necessity of proper diagnosis before therapy is considered, is preparing a series of brief papers on the diagnosis of syphilis to be published in the state medical journal.

5. Your committee has discussed at length the problem of postgraduate and undergraduate education. It was decided to continue the speakers' bureau on venereal diseases in connection. The apathetic attitude on the part of the physician is believed to be the basic problem at the level of state venereal disease control, with particular reference to case reporting, only by which can the venereal disease problem be properly evaluated.

6. The services of the medical school in Kansas City and the Sedgwick County Venereal Disease Clinic in Wichita are to be made available to the venereal disease patients through his or her local medical authority for the purposes of diagnosis, evaluation, and treatment recommended. The details of the program are currently being worked out through the office of the Acting Director of Venereal Disease Control of the State Board of Health, Dr. H. G. Nelson.

7. Although statistical studies by the state based on the reporting of the individual physician reveal only an expected fluctuation in venereal disease incidence, this committee will watch with interest what effects if any the repeal of the Kansas Bone Dry Law will have in this connection.

Respectfully submitted,

J. P. Berger, M.D., *Chairman.*

VETERANS ADMINISTRATION AFFAIRS

O. W. Davidson, Chr., Kansas City; J. W. Cavanaugh, Topeka; Dwight Lawson, Topeka; E. A. McClintock, Topeka; L. S. Nelson, Salina; J. H. A. Peck, St. Francis; C. B. Trees, Topeka.

To the House of Delegates:

Your committee has worked on many problems during the past year. Some of these are individual while many are of interest to the membership. Some of these seemed of sufficient importance that your chairman and others traveled to St. Louis and to Wichita to meet with officials of the Veterans Administration. On one occasion the medical director and the director of out-patient services from the St. Louis branch office met with the Council of the Kansas Medical Society. Besides these interviews considerable correspondence has also taken place.

It appears, as it did in the beginning, that the primary difficulty arose in the interpretation of regulations at the level of the regional office and as a correlary, in the failure of the individual physician to understand these regulations. As in the beginning,

personnel of the branch office has always been cooperative, and although frequently unable to adjust the problems presented to them they were sympathetic and understanding.

Reviewing the problems of the year would be to repeat experiences familiar to each member of the House of Delegates. In general the quality of examinations has improved to a point where very few are now returned by the rating boards as unfit for rating purposes. The backlog of examinations is currently being eliminated until a larger proportion will be cared for by full time Veterans Administration medical services. In the future the medical society will probably be called upon to do fewer examinations, especially in the general category, but it is possible that the treatment portion of this program will increase.

Many of the problems currently besetting this program remain unsolved as this is written, but information has just been received regarding personnel changes in the regional office. A conference between members of the medical society and the regional manager will shortly take place, and if this achieves success the program may once more function more to the satisfaction of the medical society, the Veterans Administration and the veteran himself than has been true in the past.

Respectfully submitted,

O. W. Davidson, M.D., *Chairman.*

Dihydrostreptomycin Available

Dihydrostreptomycin, a new drug which produces significantly less nerve damage than streptomycin, of which it is a derivative, is now available to the medical profession, according to a recent announcement from E. R. Squibb and Sons, producers.

Dihydrostreptomycin has definite advantages over the original drug in the treatment of tuberculosis, according to six physicians who made extensive tests and reported their findings in papers in the November issue of the American Review of Tuberculosis. The studies were conducted at New York-Cornell Medical Center, the Mayo Clinic, the Squibb Institute for Medical Research and the Merck Institute for Therapeutic Research.

Congress on Rheumatic Diseases

The International Congress on Rheumatic Diseases will meet in New York City May 30 through June 3, 1949. The meeting is open to all physicians, and a registration fee of \$10 will be charged. Papers will be presented before the plenary sessions in the mornings, and clinics will be held at several New York hospitals in the afternoons.

A number of physicians from foreign countries will take part in the program, with English, French and Spanish as official languages of the meeting.

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Drug Advances Malaria Control

A new drug, "Aralen," now being distributed throughout the world by Winthrop-Stearns, Inc., can be the means of economically eradicating malaria in endemic areas, according to the report of Dr. D. A. Berberian before recent sessions of the American Society of Tropical Medicine, the National Malaria Society and the American Society of Parasitologists. The drug is also known as chloroquine diphosphate.

Dr. Berberian told of the use of the drug in treating enlargement of the spleen, a serious complication of chronic malaria, and discussed experiments conducted in two villages in Lebanon with the help of the Lebanese government. Results in those experiments were so satisfactory that the drug is now being used extensively throughout Lebanon.

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The Papanicolaou Test in the Cancer Control Program*

Willis E. Brown, M.D., J. T. Bradbury, Sc.D., and O. F. Kraushaar, M.D.**

Iowa City, Iowa

The diagnosis of cancer has evolved by stages; clinically, by the gross tumor or ulceration causing death, histologically by evidence of tissue infiltration, and lately by the recognition of cytologic changes in desquamated cells.

The histologic diagnosis of cancer is the sheet anchor of the study of oncology, and yet if the recognition and treatment of cancer is delayed until histologic evidence of invasion is obtained, the opportunities of cure are reduced. In addition to the standard histologic evidence of cancer, many pathologists have come to recognize certain cellular changes as indicative of malignancy and use such descriptive terms as precancerous, carcinoma in situ, intraepithelial, or noninvasive cancer, to describe these changes. The Papanicolaou or cytologic test is based on the recognition of these cellular changes in desquamated cells found in the vaginal discharge and other body fluids.

The epithelium of the genital tract, in conformity with other epithelial surfaces, desquamates the superficial layers of cells. This specialized epithelium responds in a characteristic manner to ovarian function and these changes may be identified in desquamated cells recovered from the vagina. In addition to these physiological variations in the desquamated cells, abnormal cells can be identified in the vaginal discharge. Frequently these abnormal cells can be definitely identified as coming from a malignant tumor, while other cells are recognized as abnormal without evidence of the nature of the surface from which they were shed.

The recent interest in this field has led to the development of techniques that attempt to compete with or displace the histologic methods of diagnosis embodied in the biopsy. Such competition is valuable, for it serves to portray statistically the deficiencies in each method of diagnosis. Such reports show a significant error for each, the clinical, his-

tological, and cytological methods of diagnosing cancer.

The greatest need in clinical oncology today is for methods to detect occult or unsuspected cancer. The opportunity for cure of cancer bears an indirect ratio to the extent of the tumor. Even with improved methods of treatment, cure will be denied the patient unless therapy is instituted early. The problem of how to find these patients has remained unsolved. Routine physical examination has proven impractical and, as will be pointed out below, unreliable.

We became interested in the possibility of adapting vaginal cytology technique to population screening, much as the tuberculin skin test or miniature chest film is used to sort out those patients needing more critical study of pulmonary disease. Women found to be shedding abnormal cells in the vaginal discharge are referred to a clinician to determine the source of these cells and to establish the nature of the lesion from which they are derived. This paper reports our experience in adapting the cytology test for genital malignancy to population screening.

Methods and Materials

This program has developed through several stages: training in cytologic diagnosis, the establishment of a laboratory, the development of a method suitable for population survey, the verification of the method on a closely controlled group of patients, and finally the use of the technique on large groups of women to detect unsuspected carcinoma.

First, a word about the test itself. Some confusion exists regarding the procedure because of the misuse of the word "test," the cytologic test, the Papanicolaou test, the vaginal smear test, etc. This terminology, combined with the use of special stains has created the erroneous impression that the cancer cells take a special stain. Unfortunately, such is not the case. The cells can be stained with any polychrome stain which produces good nuclear detail so necessary for cellular recognition and interpretation.

The procedure is similar to the techniques of

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**From the Department of Obstetrics and Gynecology, University of Iowa College of Medicine.

biopsy, in that the method involves obtaining of cells (or tissue), preparation by fixation and staining, and interpretation by a trained cytopathologist. The problems encountered in cytopathologic diagnosis of smears are similar to those of histopathologic interpretation of tissue. The cells on the smear may be insufficient for interpretation, the preparation of the slide may be faulty, and the slide may not contain abnormal elements, just as a section of tissue presented to the histopathologist may be insufficient, poorly prepared, or not representative.

Since cytology is a relatively new field, it seems suitable to outline briefly our experience in establishing a cytology laboratory. The laboratory should be under the supervision of a physician, preferably a pathologist. While the technician is of great assistance in the preparation and scanning of slides, we believe that interpretation of clinical specimens should be the function of a physician. It is entirely feasible for a routine hospital or private laboratory under the direction of a pathologist to include this service.

The physician should plan to spend several weeks in an established laboratory for personal instruction, followed by several months of diligent personal study. Simultaneous study of smears and biopsies from a large number of women in all phases of the ovarian cycle and exhibiting all types of pelvic lesions will prove invaluable in gaining the necessary experience. Our observations suggest that it requires several months and the study of approximately 1000 slides before proficiency is obtained in recognizing the many cell variants encountered in the vagina.

The preparation and staining of the slide is a routine procedure that can be handled by any laboratory technician. With multiple slide carriers, one technician can process 25-50 slides an hour. Likewise the clerical work is such that the regular secretary or file clerk of the laboratory can handle this assignment.

If routine smears are to be received in the laboratory, a cytology technician will be essential. This assistant must be selected and trained with care, for on her is placed the responsibility of sorting and marking of slides. The use of a Schaeff marker on the objective lens carrier permits the technician to circle all groups of abnormal cells on the slides for review by the physician. A well trained cytology technician can scan and mark about 20 slides a day and reduce the time required by the pathologist for interpretation.

To add this service to an existing routine laboratory will require a capital investment of \$1500 to \$2000 (primarily in salaries during training) and about six months' time. Thereafter, a \$300 to \$400 monthly operational budget (See Table I) would

TABLE I
OPERATING COST

Capital Investment	\$2,000.00
(technician's salary during training, travel, and supplies)	
Time	Six months
Operating Expense (For 20-30 slides per day)	
Technician's salary (cytology)	\$ 200.00
Materials and supplies	50.00
Secretary (one-fourth time)	50.00
Technician (one-fourth time)	50.00
(routine laboratory)	
<hr/>	
	\$ 350.00
Net cost per slide	1.00

be adequate to handle from 300 to 400 slides a month, making the cost \$1.00 per slide. Thus the expense of placing a prepared, scanned and marked slide before the physician is comparable to that for a tissue section. A reasonable charge per patient will permit the laboratory to support itself and provide for a professional fee.

This would place a scanned marked slide before the pathologist for about \$1.00 per slide. This approximates the cost of a tissue section prepared in the usual manner.

Having thus trained ourselves in vaginal cytology and established a working laboratory, methods suitable for surveying large groups of women were studied. The existing methods of Ayer, Papanicolaou, and Meigs were explored and found wanting in simplicity. If large groups of women were to be checked, it was necessary to devise a test which could be carried out largely by nurses and specially trained women workers. After several trials, a damp cotton swab applicator protected by a paper sheath was devised which permitted obtaining specimens in a few seconds. (See Figure I) The patient lies on any suitable table or bed and the sheath is inserted down the posterior vaginal wall into the culdesac. The cotton pledget collects the discharge containing shed cells and the sheath protects the applicator on withdrawal. The material is spread on a labeled glass slide and immediately dropped into the fixative solution. The sheath and applicator are discarded. Using this method an admitting nurse can identify a slide, obtain a smear, and place it in a fixative in less than a minute.

Since this was a new technique and was relying on a single vaginal smear, it was necessary to establish its value in the detection of genital cancer. Vaginal smears were obtained on all women entering the Gynecologic Service of the University Hospital. Here careful pelvic examination and frequent biopsy



Figure 1

Equipment Needed for Obtaining Vaginal Smears

The sheath is a cardboard design furnished by the Ortho Research Foundation through which the usual cotton applicator is passed. The bottle contains equal parts of 95 per cent alcohol and ether. A paper clip makes it possible for several slides to be placed in the same bottle without adhering to each other.

permitted excellent control. When reasonable correlation was obtained, the survey was extended to include all women entering the University Hospital over the age of 30 regardless of service. All patients who shed abnormal cells were referred for special study which included a repeat smear, pelvic examination, and frequently cervical or endometrial biopsy. Several cases of unsuspected cancer were discovered by this process in which the vaginal smear had pointed the way to a more detailed examination.

Encouraged by these results, a survey was made of two state mental hospitals. This provided an opportunity to study a larger and completely unselected group of women. Here again, women who were shedding abnormal cells were selected for more detailed study. Ninety per cent of such patients were found to have some pelvic abnormality warranting gynecologic consideration.

The final step in certifying this procedure involved its actual use on a county wide basis. A co-operative program was developed with the Washington County Medical Society, the County Cancer Society, and our Research Laboratory. Publicity through the county was handled locally. The physicians offered their offices to all, and most of the smears were taken by their office nurses. The interpretation of the slide was reported to the physician as negative or suspicious. Patients whose vaginal discharge contained abnormal cells were thus called to the attention of the physician for detailed study to ascertain the source of these abnormal cells.

Interest in cytology has been aroused in other areas. Studies now in progress are exploring the use of cytology in the diagnosis of lung, kidney, and gastric cancer where the tumor is inaccessible for biopsy.

Data

This survey has studied the vaginal cytology on over 5000 women divided as follows: 1090 from the Department of Gynecology, 1504 from the other services in the University Hospital, 1482 from two state mental hospitals, and 1238 from the county survey.

These data are presented in Tables II, III, and IV.

TABLE II

The Vaginal Smear as a Population Screening Procedure

	University Hospitals	Mental Hospitals	Washington County
Initial vaginal smears	2594	1482	1238
Suspicious or positive smears	154	27	10
Pelvic examinations	2398	67	14
Biopsies	636	28	6
Carcinomas found	93	5	3

The three areas of study are indicated in the table. In the mental hospitals and in the Washington County survey, the smears were taken, read, and subsequent examination determined by these findings. Patients who showed unsatisfactory smears or smears showing abnormal cells were subjected to further examination. The increased number of pelvic examinations in the mental hospital series was due to a detailed study of those older women showing cornification of epithelial cells.

In the hospital group, the first vaginal smear, the pelvic examination, and the first biopsy have been correlated with the final diagnosis (See Table III). In the groups from outside the hospital, the incidence of follow-up studies and discovered cancer are detailed.

In this study unsuspected cancer has been detected 25 times in 5214 patients or an incidence of 1:200. In 17 instances the cancer was undetectable by pelvic examination. These have all been very early tumors offering excellent prognosis.

It is difficult to compute the cost of case finding in a research laboratory, but it would appear to be about \$300 to \$400 per case exclusive of professional charges. This compares favorably with the figures of \$1200-\$1500 for finding a case of tuberculosis or \$8,000-10,000 for gastric cancer.

Discussion

These data have proved extremely interesting and have served to place in a new perspective the meth-

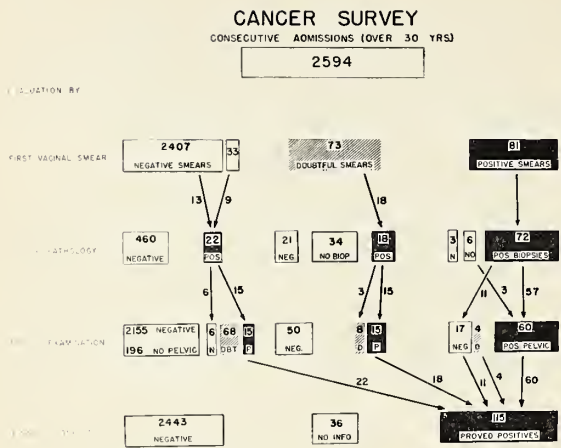


TABLE III

Summary of the Vaginal Cytology Study at the University Hospitals

The first vaginal smear, the first biopsy, and the first pelvic examination are correlated with the final diagnosis.

ods for the recognition of genital cancer. There are now three methods for detecting or suspecting uterine cancer, the clinical, the histological, and the cytological examination. Routine survey of all female admissions to a hospital or of large groups of women must rely on a single examination for preliminary screening. A single examination by each of these three methods has shown a significant error rate; it is believed that by combining all three, existing cancer would probably not escape detection. A critical comparison of the three methods of detecting cancer against the final diagnosis is revealing.

The clinical examination carries many false negative as well as false positive diagnoses. Most of these examinations were made by young men in training as specialists and, therefore, represent an awareness of cancer and clinical ability above the general level of medical practice. It is of interest to compare the first 1000 with the second 1000 cases from the hospital service. After the first thousand slides, a preliminary report was made to the staff of the department and we were chagrined by the number of clinically missed cancers. The second 1000 contains a decreased number of false negatives but a greatly increased number of false positive diagnoses. Several patients ultimately shown to have cancer were not subjected to biopsy at the initial examination because of the absence of suggestive evidence. Thus it is apparent that a reasonably careful clinical examination may fail to detect the presence of early cancer (17 out of 115 in hospital series).

The biopsy, which is firmly established as the

final authority in the clinical management of cancer, was also found wanting in the detection (not diagnosis) of cancer (See Table IV). A superficial

TABLE IV

Comparison of Clinical, Cytologic and Histologic Methods of Detection of Genital Carcinoma University Hospitals Series

		Total	% Error
Proven malignancies:	Total	115	-----
First pelvic examination:	Negative	17	14.7
First vaginal smear:	Negative	13	11.3
First biopsy:	Negative	7	6.0

The patients with proven malignancies were evaluated according to the findings determined by the first study of each category. It is noted that the first pelvic examination gives the highest incidence of error. The apparent superiority of the biopsy in the establishing of the diagnosis of genital cancer results from the use of multiple sections.

survey of the data suggests a superior rating for this method of diagnosis. However, in 11 instances, a second or third biopsy was required to establish the presence of cancer first suspected by the vaginal smear or pelvic examination. Frequently (12 times) the pathologist requested additional material before making a diagnosis and often only one of several histological sections revealed the presence of cancer. If this privilege is granted the clinician and the cytologist, the incidence of error in each group drops considerably. And lastly, the interpretation of the histologic section offered uncertainties. In a few cases, there was disagreement among those reviewing the slide as to the interpretation of the character of the lesion; some called the condition pre-cancerous, others an intraepithelial carcinoma, and a third group recorded a diagnosis of invasion cancer.

The accuracy of this method of obtaining smears has been determined. The method employed in this study is open to question from the standpoint of accuracy of diagnosis of cancer. The methods reported by Papanicolaou, Meigs, and Ayer claim an accuracy rate approaching perfection. In order to obtain such excellent results, the cervix must be exposed to direct vision, smears taken directly from the portio vaginalis and endocervical canal, and multiple specimens studied in suspicious cases. As valuable as such technicians may be, they are poorly adapted to the survey of large groups of women. It is evident from this study that a diagnostic accuracy may not be obtained by a single vaginal smear. The choice of method then depends upon whether one is contemplating a screening test for population sur-

vey or a diagnostic tool which is to compete with the biopsy.

The false negative reports in this study occurred in patients who had well advanced symptoms producing cancer. These observations are in accord with those of Graham and Meigs, namely, that in advanced carcinomas the necrosis of the tumor cells obscures the cytologic picture so as to render interpretation difficult. These patients should be suspected from simple questioning.

In contrast, the most dramatic results from the cytologic examination appear in cases where the lesion is asymptomatic and where both history and routine examination had not aroused suspicion of cancer. In the course of this study the cytologic test

treated genital cancer have also been studied (See Table V). In 164 instances it has been possible to compare the vaginal smear with the clinical condition of the tumor. It is evident that the cytologic method is of limited assistance in the late follow-up of cancer. The presence of abnormal cells in the vaginal smear correlates very well with the presence of residual carcinoma. However, a negative smear is of little help in the evaluation of these patients.

On reflection this is to be expected. Recurrent carcinoma may involve the upper pelvic tissues and not shed cells into the vagina. Also, the local lesion may be walled off and isolated from the genital tract so that exfoliated cells are not obtained. And lastly, secondary infection and necrosis frequently obscure the issue and render an interpretation impossible.

Summary

In summary, we have presented our experience in setting up a cytology laboratory and the anticipated operational expense. Methods have been devised for population screening to detect genital cancer. This method has demonstrated that it can detect unsuspected carcinoma. The simplicity of the method has sacrificed something in accuracy of diagnosis.

Each of the three methods (clinical—histological—cytological) for detecting cancer of the genital tract has been shown to possess inherent errors; the clinical and the cytological exhibit both false positive and false negative diagnoses.

The use of the cytology test as a screening method has proven its value in population surveys.

Conclusions

1. The establishment of a cytology laboratory is a feasible and suitable function of a hospital laboratory.

2. Each of the three methods (clinical, histological, and cytological) or routine examination for the detection of genital cancer carry an error rate.

3. Routine vaginal smears will screen out a small group of women for a critical examination leading to the diagnosis of unsuspected genital cancer.

TABLE V

POST-TREATMENT CHECKUP—CANCER
OF CERVIX
130 Cases—164 Smears
CLINICAL EVALUATION FOR RESIDUAL
CANCER

Positive 35 Smears			Suspicious 16 Smears			Negative 113 Smears		
Pos. 12	Susp. 5	Neg. 18	Pos. 2	Susp. 1	Neg. 13	Pos. 4	Susp. 14	Neg. 95
		4 bowel 1 lung 1 bladder						

The patients who returned to the hospital for a checkup of the clinical condition of their carcinoma were studied in a similar manner. The cases have been catalogued according to the vaginal smear. The clinical evaluation of the patients in each of these three categories is indicated for each group.

led to the detection of 14 cases of carcinoma in situ.

Patients entering the hospital with previously

Cleft Lip and Cleft Palate Reconstruction A Manifold Problem

A. E. Hiebert, M.D.

Wichita, Kansas

Each cleft lip and cleft palate as well as every innovation in the technique of its repair presents a challenge to the surgeon. From time to time, however, he may be stimulated to a heightened consciousness of his responsibilities. Such was the case for many of us when some years ago Doctors V. P. Blair and J. B. Brown presented their "Plea For A Better Average Harelip Repair." Here were discussed the technical aspects of harelip reconstruction with a special appeal to the plastic surgeon for better results.

More recently there came to the author a similarly forceful appeal from an entirely different point of view. This one was from the father of an infant with a particularly difficult cleft lip and cleft palate. Under visible emotional strain he begged, "Please, doctor, for the sake of the child and of the family do the best you can." Conversation brought forth the situation of another similarly afflicted child in the family, a boy of 11, whose repair had not been too successfully completed. The father was deeply concerned lest the younger son should fall heir to the same damaging slights and abuses which had beset the elder and as a result were making him a social problem. Obviously the prospective patient presented more than a surgical problem—and most of these cases do. The realization of this fact served as an inspiration for the following paper, which is not a technical contribution, but rather an effort in compiling and correlating some of the different factors dealing with successful cleft lip and cleft palate reconstruction, in the hope of promoting a more effective integration.

The measure of success can best be determined when these patients are observed years later. The ideal result should be: (1) anatomically acceptable to the public, (2) functionally adequate, (3) subjectively satisfactory to the patient. To construct such an ideal requires a number of builders besides the surgeon. It is well to allocate responsibility and to integrate effort.

I. Obviously the anatomic restoration, which is paramount, comes to the attention of the *surgeon*. Probably no one is more conscious of his responsibility, for he realizes that while working on a face he may in reality be molding the lifetime career of his patient.

II. The *referring doctor* has much to do with the pre- and postoperative policy determination. He is

the general referee, and will be asked questions regarding the time and the minimal health requirements for surgery and many other questions regarding the extended period of aftercare. To him will come such as the following questions—

(1) When should a cleft lip be repaired?

Opinions on this point vary and each surgeon may have his optimum; but generally we have adhered to the view that the best time for cleft lip repair is shortly after birth, when the infant has gained back its birth weight and is well adjusted to his feeding. In favor of an early repair may be said:

(a) It helps in the mechanics of feeding.

(b) It reduces the drying of mucous membranes, thereby minimizing the tendency to respiratory infections.

(c) In cases complicated by a cleft palate, it helps in the gradual approximation of the gaping maxillary processes.

(d) Further it is a kindness to the family not to send an infant home with such a disturbing deformity.

If for some reason or other the primary repair has been delayed, or if an earlier operation has not been complete, and many of these cases require more than one operation for optimum results, the reconstruction can be done at any time later. (Many patients seem to have the delusion that once an operation has been done, no further revision is possible). Generally the earlier the surgery is done the less likelihood there is of permanent untoward personality changes.

(2) When should a cleft palate be repaired?

Here again there is room for a difference of opinion. We have followed the policy of others in operating preferably between the ages of one and two years. At this time the parts are large enough to be tenable, tooth buds are not so likely to be injured, and the patient has not had time to develop undesirable speech habits. The advantages of repair earlier are more than offset by the hazards of the operation.

Primary repair or secondary revision may, of course, be done at any time later. Many repaired palates, through no fault of the surgeon, are too short to reach the posterior wall of the pharynx. Here the advisability of elongation should be considered. In

order to be adequate the palate must be long enough to reach the posterior wall of the pharynx during the velopharyngeal sphincter action. Palatal speech is due either to insufficient and faulty mechanism, or to failure on the part of the patient to make full use of the mechanism present.

(3) What are the minimum health requirements for safe lip and palate surgery?

Since these repairs are optional surgery, and since failure causes increased difficulties in subsequent attempts, it is important that the patient's health be at the optimum. Many patients, especially those coming for palate repair, have marked nutritional anemia, so that surgery has to be delayed. (Parents often mistakenly think that because of the palate defect the child cannot eat normal food). If the family would consult the home doctor prior to contemplated surgery, much disappointment could be avoided. A minimal blood requirement is a red blood cell count of 4,000,000 and a hemoglobin of 70 per cent. The use of iron and a well balanced diet usually corrects these deficiencies rather promptly. The patient should be free from active respiratory infections. Sometimes there is an irritation due to the drying of mucous membranes associated with an open palate, which will not completely clear up till the palate is repaired. This must be differentiated from active infection. Many cases with cleft palates have a chronic otitis media. This is not a contraindication to palate surgery unless there is an acute exacerbation, as long as the general condition of the patient warrants surgery.

III. The *dentist* oftentimes plays an important role in the reconstruction. To him come questions referable to ortho- and exodontia, the preparation of prostheses, the building of delicate obturators where

palates are unsuitable for repair.

IV. When the lip and the palate have been restored to normal as far as is practical, there comes the problem of *speech training*. Oftentimes the patient is unaware of his impediment, since he does not hear his own voice as others do. In Wichita we have enjoyed a gratifying cooperation with the Wichita University School of Logopedics, under the able leadership of Dr. Martin F. Palmer.

V. Comes then the question of later *tonsillectomy* and *adenoidectomy*. Patients with previous cleft palates offer a special problem, as they naturally tend to have short palates. Tonsils normally lessen the size of the aperture which the palate has to span, and adenoids tend to reduce the nasopharyngeal opening. Their removal may tend to augment a pre-existing speech defect or give rise to a new one. When it is positively imperative to remove either tonsils or adenoids, or both, this should be done with the greatest conservation of the remaining soft tissues, with the minimal of scarring, and in the knowledge that the procedure may tend to aggravate an existent speech impediment.

VI. The services of a *psychiatrist* are valuable in the solution of adjustment problems arising as the result of developmental deformities; but every effort should be made to forestall these complications by alertness to recognize them in their earliest manifestations.

VII. At this point the *parents, teachers, playmates, the entire community*, all have a hand in determining the success or failure of cleft lip and cleft palate surgery. In the last analysis the success of reconstruction is measured in terms of happiness of the patient. No matter how perfect a structural and functional result he may have, if he is not satisfied



Figures 1-A and 1-B. Before operation.

Figure 2. After reconstruction.

the process is not a success. By the same token, a patient may have a very mediocre objective result, and yet under proper stimulation he may become a great success. In this the wisdom of parents and teachers, the attitude of comrades and playmates, the atmosphere of the entire community are reflected. Recently in discussing this problem with the principal of a rather large school in which there are a number of these children, the information was brought out that the entire program was geared to absorb them so that they would be treated just like anyone else. It was considered poor taste to do or say anything which might call attention to their defects. It is an art to rear these children to rise above their handicaps. For them the Bard has truly spoken, "There's nothing either good or bad but thinking makes it so."

The following cases are presented by way of illustration.

Case I. R.T. 9910 (Figures 1 and 2). This infant had a bilateral cleft lip and cleft palate with a marked protrusion of the premaxilla. The repair was done by a technique similar to that used in two separate single cleft lips. This has the advantage over that used in Case II in that it results in a lip with more normal contour and dimensions. For the past year we have followed this method of repair. (This

represents the patient in the introduction).

Case II. G.B. 1745 (Figures 3 and 4). This patient had a similar deformity to that in Case I. He now has a fair anatomic and a good functional result. He is eight years old, speaks well, and is doing well in school. His parents have raised him very intelligently and wisely just like his older brother, never calling attention to his handicap or expecting less of him because of it. He has no perceptible evidence of an inferiority complex.

Case III. B.N. 1039 (Figures 5 and 6). This patient, a 23-year-old female, in spite of early surgery, had all the earmarks of an all around poor result. The lip surgery had never been completed, and the palate was unrepaired. On admission she hid her face with her hands, her eyes were cast to the floor, and she phonated so poorly as to render her speech almost unintelligible. Later at the hospital she would even become belligerent at times and throw dishes at the nurses. She evidently had received the full impact of all the actual and imaginary abuse that could come to such a person.

After reconstruction and securing suitable dentures* she assumed an entirely different outlook. Whereas previously she had never received more

* Prosthesis by Dr. C. E. Tuttle.



Figure 3. Before repair.



Figure 4. After repair.

than three dollars a week working out of sight in some kitchen, she now is "becoming rich," has friends, and leads a normal life.

Case IV. R.V. 826 (Figures 7 and 8). This lad of 19 years had had early incomplete surgery for a double cleft lip and cleft palate. He had become a problem child and had run away from home. Since

man, and meets one on the street with a "Hi, Doc" and a slap on the shoulder.

Case V. This patient, a young lady of 20 years, was referred by a psychiatrist, with the question as to whether further surgery could benefit her. She represented an excellent objective, but a poor subjective result. When she was told that she had a



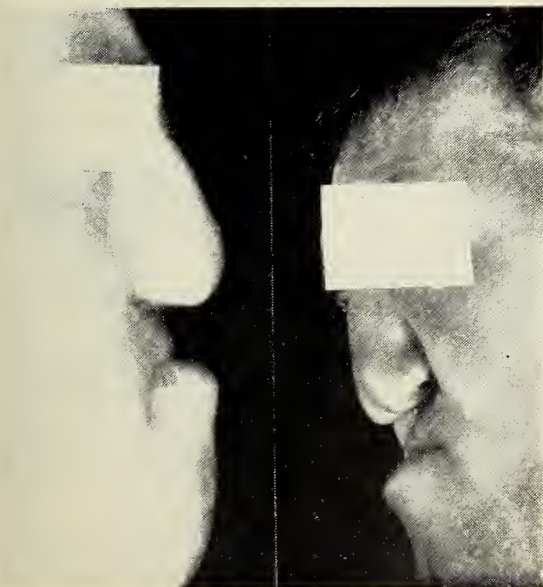
Figures 5-A and 5-B. Before revision of lip, nose and palate.

Figures 6-A and 6-B. After reconstruction.

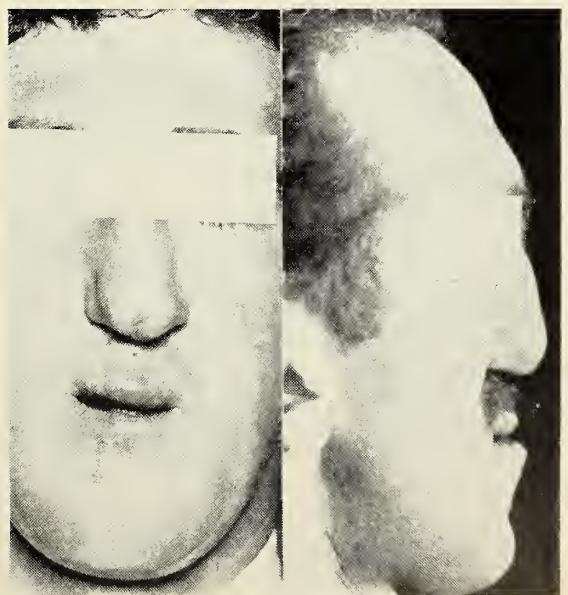
reconstruction including the securing of suitable dentures*, while the objective result is far from flattering, he is greatly improved functionally and subjectively. He holds a responsible position as a fore-

very nearly perfect repair and that no further revision was indicated, she volunteered that she had been told the same thing by a number of prominent plastic surgeons at various parts of the country and that she was afraid she might have to "give up." She remained a problem for the psychiatrist.

*Prosthesis by Dr. David T. Parkinson.



Figures 7-A and 7-B. Before revision.



Figures 8-A and 8-B. After reconstruction.

Case VI. R.J. 3640. This young lady had finished high school, but was unable to secure a position because of a speech impediment. The cleft palate which had previously been repaired was too short. This was elongated and the patient was given speech training. Shortly after this she gleefully announced that she had secured her first position as a saleslady. She later went to college, married well, and is loved by everyone because of her cute "southern drawl."

Summary

An attempt has been made to point out various factors in the successful reconstruction of cleft lip and cleft palate deformities. Emphasis has been placed on the fact that this is a larger problem than can be shouldered by the surgeon alone. A close co-operation between the surgeon, the referring doctor, the dentist, the psychiatrist, the logopedist, otolaryngologist, the home, the school and the community is urged for maximum benefits to the patient. The time for surgery and the minimal health requirements have been discussed. Cases illustrating various problems have been presented.

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Liver Function in Neuropsychiatric Patients As Determined by the Hippuric Acid Test

Thomas L. Foster, M.D.

Halstead, Kansas

The purpose of this study was to determine whether a relationship could be found between personality decompensation and hepatic decompensation by correlating the clinical picture with liver function measured by the hippuric acid test.

The hippuric acid test has had sufficient extensive clinical application during the past decade to prove it a valid measure of two of the liver's multifold functions. These are the functions of synthesis and detoxification. Sodium benzoate is conjugated in the liver with the amino acid, glycine, to form hippuric acid. The latter is excreted by the kidneys. In the absence of dietary glycine, the liver manufactures this amino acid at a fixed rate. Glycine is not stored by the liver in appreciable quantity. Among other uses, glycine is used by the liver for conjugation with toxic metabolites. This represents one method of detoxification.

Sodium benzoate, itself nontoxic, is handled by the liver as a toxic substance. A standard dose of sodium benzoate is administered and the amount of hippuric acid excreted over a definite test period is determined. States of hepatic dysfunction mani-

fest themselves by diminished hippuric acid excretion. The test is invalid in the presence of impaired kidney function and in clinical states which would alter the rate of absorption of the sodium benzoate test solution when the oral method is used. An intravenous test is available for the latter.

Before considering our observations on hippuric acid excretion in neuropsychiatric patients, several relationships between the liver and brain should be pointed out. Physiologists think of the liver in terms of a factory. It processes raw materials so they can be utilized by other parts of the body; at the same time it must maintain its own economy. In addition, the normal liver detoxifies certain metabolic wastes which are excreted by the bowel and kidney.

It has been established that in order to maintain the economy of the liver as a functioning unit, various constituents making up the vitamin B complex, certain proteins and minerals, carbohydrates and a small amount of fat are absolutely necessary. These same elements are absolutely necessary to the nutrition of the brain; however, before most of them

can be utilized by the brain, certain chemical transformations must take place in the liver.

It is interesting to note that toxic psychosis and cirrhosis of the liver are frequently associated with pellagra, alcoholism, pernicious anemia, cardiac decompensation, prolonged infections, arteriosclerosis, thyrotoxicosis and nutritional deficiencies. Experimental studies on vitamin B deficient diets in both man and animals have produced both cerebral and hepatic decompensation of varying degrees.

This study represents a total of 436 patients, as shown in the table, who were admitted directly to the neuropsychiatric service. A few on the surgical service developed toxic psychosis prior to operation but in most instances postoperatively. Except in a few instances, cases with elevated blood bromide or decreased kidney function were not included. One of the inherent sources of error in the test is incomplete emptying of the bladder at the end of the test period. In most cases the final specimen was obtained by catheter. In a few instances the intravenous hippuric acid test was used.

Results

Of 436 neuropsychiatric patients studied, 176 (40 per cent) had impaired hippuric acid excretion. Of 117 patients diagnosed psychoneurotic, 56 or approximately one-third showed evidence of hepatic insufficiency without significant symptoms or physical findings of somatic disease. They represent all

psychoneurotic types, all age groups and their psychiatric disorders vary greatly in duration. In going over the records we cannot explain the impaired liver function, except in a few cases, on the basis of an inadequate diet. The question arises immediately as to whether a disordered personality could in some way make greater demands upon the liver to produce a secondary decompensation of that organ, or whether hepatic dysfunction alters personality.

Twenty-three of a group of 52 patients (31 per cent) diagnosed manic depressive psychosis had impaired liver function. There was some correlation between the severity of personality disturbance and the degree of hepatic dysfunction. Although not shown in the table, there were more cases of hepatic insufficiency among the depressed patients. Liver impairment increased to 48 per cent in 44 schizophrenic psychoses which again represents a more severe psychiatric disturbance of longer duration.

There were 45 patients with toxic psychoses (alcoholics were excluded from this group). A few were admitted directly to the psychiatric service in a state of toxic delirium while the remaining patients were on a surgical or medical service and developed toxic psychoses during the course of treatment. In five instances bromide intoxication was a possible factor. The surgical procedures included thyroidectomy, prostatectomy, cholecystectomy, gastric resection, operative treatment of fractured hip, and a few other miscellaneous procedures. Of the

LIVER FUNCTION IN NEUROPSYCHIATRIC PATIENTS AS DETERMINED BY THE HIPPURIC ACID TEST

Hippuric acid test values: normal, 80-100%; mild impairment, 70-80%; moderate impairment, 60-70%; marked impairment, 50-60%; severe impairment, below 50%

Classification	Number of Patients	Normal	Impaired	Mild Impairment	Moderate Impairment	Marked Impairment	Severe Impairment
Entire Group Studied	436	260	176	69	47	25	35
		60%	40%	16%	11%	6%	8%
Psychoneuroses	173	117	56	32	12	5	7
		67.5%	32.5%	18.5%	7%	3%	4%
Manic Depressive Psychoses	73	52	23	9	6	4	4
		69%	31%	12.3%	8.2%	5.5%	5.5%
Schizophrenic Psychoses	44	23	21	10	4	4	3
		52%	48%	22.8%	9.1%	9.1%	6.8%
Toxic Psychoses*	45	18	27	5	8	3	11
		40%	60%	11.1%	17.8%	6.7%	24.4%
Senility and Arteriosclerosis	29	12	17	4	5	3	5
		41%	59%	13.8%	17.2%	10.3%	17.2%
Psychoses Associated With Syphilis	11	7	3				
			33%		to		7%
Neurologic Disorders Without Psychoses	42	18	24	6	11	6	1
		42%	57%	14.3%	26.3%	14.3%	2.3%

*In the group of toxic psychoses there were:

- 2 with m'graine
- 5 in which bromide was not ruled out
- 2 in which the psychosis lasted 72 hours
- 7 in which the psychosis lasted 48 hours
- 2 in which the psychosis lasted 24 hours

medical cases, pernicious anemia and diabetes were represented. This group will be discussed in detail later. However, it is worth noting that aside from the five patients in which bromide intoxication was not definitely ruled out, a personality disturbance is either associated with a very severe psychoneurosis or the psychotic symptoms were of short duration.

Among the 29 patients with senility and arteriosclerosis, the incidence of subnormal liver function values was very high. This is not surprising. A number of this group probably should have been included in the toxic psychosis group. Their mental symptoms did improve considerably on routine treatment which will be discussed later.

No particular significance can be attached to our findings in 11 patients with psychosis associated with syphilis.

In 42 patients with neurological disorders without psychosis, the greater majority showed a moderate impairment of liver function. Among these patients are those with pernicious anemia (several with combined sclerosis), brain tumor, arteriosclerosis without psychosis, pituitary tumor, tabes, and a wide variety of neurological disturbances. The absence of psychiatric disturbance in this group strongly suggests factors other than impaired liver function as measured by the hippuric acid test are involved in the toxic psychosis.

We hope to repeat this work, using a battery of liver function tests, psychological tests, various vitamin deficiency tests and attempt closer correlation between clinical symptoms and laboratory findings. Unfortunately in a study such as this, we are studying patients over short periods in a hospital environment and can only presume what feelings and reactions have been previously present.

Discussion

So far we have gained a number of clinical impressions that will need further investigation before they can be substantiated by statistics. The terms "toxic delirium" and "toxic exhaustive psychosis" are objectionable since these patients may be neither toxic nor exhausted. It seems more likely that they may be deficient. Since the terminology is so indefinite we shall designate the clinical entity here considered as "toxic psychoses."

These patients are usually past 40 years of age. As a rule the first symptoms occur at night and may last a short time, being either completely forgotten by the patient or passed over as a bad dream the next morning. Each night the psychotic period becomes longer and more intense. The patient becomes confused and soon becomes disorientated in one or more spheres. Insight is lost. After a few days there are no lucid spheres. Misinterpretations

of all sensory perceptions are frequently early and are vivid disturbances to the patient.

Three other fairly characteristic features are found. First, the persecution nearly always includes persons emotionally close to the patient, usually other members of the family. For example, a distant voice may be a child calling for help and the patient may even be in no danger himself but merely prevented from performing the rescue. Second, these patients often do not resist hospital confinement and when they do it is seldom that they are really violent. The third characteristic is the extreme vividness of their delusional system which is largely supported by illusionary material. As one recovered patient expressed it, "More real than reality itself."

After seeing many goiter patients with a toxic psychosis in which liver function had been checked, it soon becomes evident that the psychosis is most likely to occur in those patients who have poor liver function and the more decreased the liver function, the more severe and prolonged the psychosis. We later found this to occur in many other medical and surgical entities, arteriosclerotics, psychoneurotics and various affective psychoses.

During the past few years our surgical staff has been checking liver function preoperatively in an increasingly larger number of patients and where it is markedly decreased, that condition is treated prior to surgery. During this time we have had marked decrease in the number of postoperative psychoses and certainly a decrease in the severity of those that do occur.

The striking similarity between the symptoms of the postoperative toxic psychosis and those of pellagra led us to use in addition a high carbohydrate high protein low fat diet, vitamin B complex, and nicotinamide in doses of 500 to 1500 mg. per day. The results were gratifying. As a rule 300 to 500 mg. of nicotinamide was given intravenously daily for the first few days and often the psychotic symptoms disappeared within 24 to 48 hours.

In order to increase the proteins in the diet, without using large amounts of expensive proprietary amino acid substances, our kitchen serves a drink consisting of one cup powdered protein milk, one-half cup cerelose, one-fourth cup of brewer's hydrolyzed yeast, well sifted together; skim milk is added to make a quart; the mixture is strained and chocolate syrup and vanilla are added to taste. Three glasses a day of this supplies over 1000 calories and if made up with natural flavoring it is quite palatable, but very unpleasant if synthetic chocolate or vanilla is used. This treatment has become so routine on our surgical floors that the surgical assistants start the routine at the first spell of nocturnal confusion, and seldom does the psychiatric consultant see any

psychotic symptoms. It was this experience that led us to attempt routine hippuric acid determinations on all psychiatric patients.

We have had two patients with reactive depression on a psychoneurotic basis that developed definite toxic psychosis in addition to their depressions, with a corresponding drop in hippuric acid liver function test values while on insulin shock. Both cases were treated for the toxic psychosis, given electroshock to relieve the depression and later responded sufficiently to psychotherapy so that the results are satisfactory and they are back at work.

A number of cases have shown a decrease in liver function when actively treated with large doses of insulin. When we do use insulin shock on cases with low hippuric acid values we are careful to give three meals a day, continue routine treatment to improve liver function, even at the expense of getting lighter insulin reaction. On several occasions depressed patients made no response to electroshock therapy until after liver function had improved.

We have three very profound long standing psychoneurotics who have been in the hospital two or more times with a definite toxic psychosis and severely impaired liver function. Recently all three cases have been readmitted; however, during the interval they have been on vitamin B complex but followed a very haphazard diet. One is a bachelor who ate everything fried. The hippuric acid liver function test value had dropped to below 50 per cent in each case but no psychosis was present.

We are now attempting to do Rorschach tests during and after the toxic psychotic episodes. We do not have sufficient material for any conclusions but so far seem to find many different very strong personality patterns reflected in the results. After recovery to their previously normal state, all patients so far tested have shown abnormal trends on the psychogram. Does toxic psychosis occur only in psychiatrically decompensated individuals?

The following case very well represents the picture as we see it. A 47-year-old woman who was raised in an insecure home, with a rather dominating mother and an indifferent philandering father, left home to go to work at 16. At that time she was unhappy, insecure, evidently quite dependent and immature. She married at 17 to obtain security. She and her husband had three children, one of whom died, and there were two abortions. This husband was indifferent, unaffectionate, ran around with other women, and was involved in a number of questionable deals, but she stayed with him until she was 31 years of age, she says because she wanted someone to support her and the children. She divorced her husband, went to work, and at 33 remarried. This marriage was not at all satisfactory and lasted three years. One year later she married her

present mate with whom she has lived for 11 years. At the time of her marriage to him she had a little money. He took charge of this and it was soon gone. The children were unhappy in the situation and they left home as early as possible.

The patient has continued to be insecure, anxious, worried, with a lot of feelings of fatigue, headache, and so forth. After they were married about a year she discovered that this husband was engaged in petty thievery and was afraid that he would be caught and she would become involved. On several occasions he has been threatening toward her.

About a month before admission to the hospital the patient became quite depressed and despondent with ideas of inferiority, reference, and so forth. We saw her in a typical reactive depression, the kind one sees in an inadequate individual who is up against an intolerable situation. At the time of admission her physical examination was negative. The hippuric acid liver function test showed 84 per cent.

She was started on insulin shock treatment in rather heavy doses, four days a week, and was given electric shocks twice a week. On the 34th day of hospitalization the patient became highly excited and developed the typical toxic psychosis as I have described above. She insisted that she heard her daughter calling in the hall, that someone was going to burn her and the children alive, people were feeding her poisonous food, and had her children in another room giving them poisonous food.

She was started on the routine treatment of toxic psychosis, discontinuing shock therapy. By the time the psychotic symptoms disappeared the patient's hippuric acid liver function determination had dropped from the admission value of 84 per cent to a level of 70 per cent. The reactive depression gradually cleared up. By daily interviews for a week she gained sufficient understanding so that she has been able to handle the family situation very well, provide emotional outlets through outside contacts, and demand that the husband make some reasonable readjustments, and although she is still a dependent and more or less inadequate individual, she is making a fair adjustment.

Another typical case is a 57-year-old widow of a minister. She gives the history of symptoms for 20 years. She was left a widow with two small children, had worked as a domestic and raised these two children, and undoubtedly had had a strenuous life. At the time of admission to the hospital a diagnosis of fetal adenoma was made by the surgeons, surgical indications being pressure symptoms, mild toxemia, and possible malignant change. The patient had shown and expressed much concern over the abnormality. The portion of the gland removed weighed 38 grams and only the adenoma was taken out. Her admission hippuric acid liver function test was 46

per cent. This was built up to 68 per cent prior to the operation. The operation was uneventful. Four nights later she developed a definite toxic psychosis, was afraid her children were going to try to kidnap her and take her home without the doctor's permission, thought her son-in-law had been decapitated, was afraid that her children would be arrested. She had absolutely no fears for herself.

Patient was given large amounts of vitamin B complex, glucose intravenously, and liver extract. Within 24 hours the psychotic symptoms had disappeared. We were unable to get a hippuric acid determination at the time her psychotic symptoms were at their height. After 48 hours treatment it was 66 per cent or two points below the preoperative liver function determination. Psychiatric examination following surgery and acute psychotic episode revealed a rigid obsessive-compulsive personality type. Since returning home the patient has been seen several times as an out-patient. She still has the same neurotic tendencies; however, her children have become more tolerant and her dependent life is relatively happy.

Summary and Conclusions

Forty per cent of a group of 436 neuropsychiatric patients give evidence of impaired liver function by the hippuric acid test. In the majority specific measures which are discussed to improve liver function produced clinical improvement. It was observed that personality disturbances of long duration responded less promptly to treatment than those of shorter dura-

tion. The incidence of hepatic dysfunction was highest in the schizophrenic senile and toxic psychosis groups. The most severe degrees of impaired liver function were encountered in toxic psychosis. One-fourth of the latter gave evidence of extreme hepatic dysfunction.

We feel that before one can ascribe any psychotic or neurotic symptoms occurring in a given patient to any particular deficiency or trauma, the personality type must certainly be determined prior to the onset of the illness, and an estimate of that individual's ability to withstand stress and strain be ascertained. The exact body chemistry involved in many psychosomatic disorders is not clearly understood. Our findings in this group of cases would strongly indicate that a decompensated personality contributes to hepatic decompensation. This may in turn interfere with cerebral nutrition and cause further personality decompensation and thus a vicious circle is established.

The therapeutic attack must be directed at the individual as a whole, with the emphasis at times on nutritional therapy and at other times on shock or psychotherapy.

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Report of A Case of Ringworm of the Scalp in an Adult

David B. Morgan, M.D.

Kansas City, Missouri

Ringworm of the scalp in adults is generally considered to be rather rare in the United States according to most dermatological texts.^{1, 2, 3} In 1928, Fox and Fowlkes⁴ reported a total of 53 such cases in the literature. Females are more commonly affected than males. Trichophyton endothrix infections, rather than those due to microsporons, are the most common types observed in adults according to Sutton and Sutton.¹

The purpose of this article is to report a case of ringworm of the scalp occurring in an adult female, which was due to the human type, microsporon audouini. More cases of ringworm of the scalp, especially microsporon audouini infections, have been reported in Kansas City during the past year than previously because of increased search for such infections to prevent an epidemic in the schools. This has been accomplished largely through training of physicians, especially dermatologists, and school nurses in the examination of the scalp by means of portable Wood's filtered ultra-violet lamps. Recognition of different types of cultures of ringworm, especially of the scalp, has been learned by an increasing number of physicians in the last few years and thus the seriousness of finding microsporon audouini infections has been given more attention with resultant more careful scalp examinations of all suspects in children.

In general, when a child has been found to harbor ringworm infection of the scalp, all other children in the immediate family have received scalp examinations by means of the filtered ultra-violet lamp. In some instances, unsuspected cases have been found. However, due to the apparent rarity of such an occurrence in adults, the parents are usually not examined.

The patient who concerns this report had a daughter who was found to have a microsporon audouini infection of the scalp. While this girl was a patient under my care, her mother noticed a patch of broken-off hairs in her own scalp and consulted me. She was found also to have a similar infection.

Report of Case

Mrs. B.C., 38-year-old white female, was seen on June 23, 1948. A dime-sized patch of broken-off hairs was noticed over the right temporal area one month previously by the patient. Physical examination revealed such a patch of broken off hairs with slight scaling and erythema of the underlying scalp. Typical phosphorous-like fluorescence was noted not only throughout this area by means of filtered ultra-

violet light,⁵ but also in a small patch to the right of the vertex after careful search of the entire scalp hair. Culture on Sabouraud dextrose agar was typical of microsporon audouini and this fungus was confirmed by culture of other infected hairs on potato-carrot agar. On August 6, 1948, most of the fluorescent hairs had disappeared through manual epilation and by local use of salicylanilide ointment. It is not felt that x-ray epilation will be necessary.

The above patient's only child, a 10-year-old daughter, was found to have a widespread case of tinea capitis proved due to microsporon audouini infection by culture on Sabouraud agar on April 3, 1948. This had been present since November, 1947. Cure was finally effected in July, 1948, by means of x-ray epilation of the entire scalp plus local use of orange ointment, salicylanilide ointment and five per cent ammoniated mercury ointment.

The child's father was free from any fluorescence on Wood's lamp examination of the entire scalp.

Comment

I feel that if all parents, as well as brothers and sisters of children found to harbor tinea capitis, are routinely given careful scalp examinations with the Wood's lamp that this condition will be found to be somewhat less rare than it is considered at present.

In treating adult cases, I believe that vigorous treatment by manual epilation and local use of fungicidal ointments will prove satisfactory. To be successful with x-ray epilation, doses close to the upper safe limit of roentgens (about 800r.)³ may be necessary in adults. This, therefore, might lead to permanent alopecia which must be avoided if at all possible. The psychological aspect of losing all of the entire scalp hair, even if only for several months, is very disturbing—especially in women patients.

To help check epidemics of tinea capitis in school children, I recommend thorough examination of the scalp by means of Wood's lamp in all members of the infected child's family, including the parents. Cultures on Sabouraud dextrose agar should be taken routinely on all patients showing fluorescence of scalp hair in order to identify the type of fungus. This finding will determine the prognosis.

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CHILD WELFARE PAGE

Facilities For The Diagnosis and Treatment of Heart Disease In Children At The University of Kansas Medical Center

During the past two years the Medical Center has developed the necessary diagnostic and therapeutic procedures for children with congenital heart disease to the point that the facilities now offered compare very favorably with those available anywhere else in the world. The same diagnostic services are available for the precise evaluation of children with actual or possible rheumatic heart disease.

CONGENITAL HEART DISEASE

Children with such cardiac defects are admitted to the pediatric service for diagnostic work-up. The *optimum age* for such admission will vary with the condition of the child. A desperately ill baby could properly be studied in the first few weeks of life; a child with a reasonably good cardiovascular equilibrium might wait until three or four years of age. After a thorough clinical appraisal and routine laboratory examinations, special diagnostic measures are carried out, including electrocardiography, stethocardiography, film and fluoroscopic examination of the heart, blood gas analyses, cardiac catheterization and angiocardiology. Following this evaluation, the child is presented at a cardiac conference, before a group of cardiologists, pediatricians, roentgenologists, and surgeons. At this final conference, the diagnosis is established, and the question of surgical treatment decided.

A chance of improvement is offered to children with the following malformations:

Patent ductus arteriosus	Pulmonic stenosis
Tetralogy of Fallot	Transposition of the great vessels
Coarctation of the aorta	Truncus arteriosus
Anomalies of the aortic arch	Anomalies of the pulmonary veins

RHEUMATIC HEART DISEASE

The same procedures are carried out for children with rheumatic heart disease, except that in these cases angiocardiology and cardiac catheterization are almost never indicated, and that no form of surgical treatment is being undertaken at present. For the most part, the problems with these children concern: (1) the presence or absence, activity or quiescence of the rheumatic process, (2) the functional or organic nature of the murmurs heard, (3) whether the cardiac status is improving or deteriorating, (4) prognosis, and (5) the conduct of long-term management of the case. As these are often matters requiring the most experienced judgment, an opinion from a "team of experts" may be of the greatest value to the patient and to the referring physician.

* * * * *

By referring patients to the Medical Center, physicians throughout the state may secure excellent consultation service for themselves and for the patient. They will also do the medical school a service. An ample and varied group of patients is necessary for the sound training of future Kansas physicians, and to assure continuous improvement in the cardiology services offered.

CANCER PAGE

The Use of Folic Acid Antagonists in Acute Leukemia in Children

There is no more important problem in hematology than that of the treatment of acute leukemia in children. Several groups of investigators have reported that folic acid and its conjugates seemed to "accelerate" the leukemic process. Because of these observations several folic acid antagonists have been prepared and used therapeutically. The most potent of these compounds is 4-aminopteroyl glutamic acid or aminopterin. Farber and his associates reported remissions of at least three months duration in 10 patients in a series of 16 cases treated. At the present time other research centers are also accumulating data as to the place of aminopterin and other folic acid antagonists in our therapeutic regimen.

The remission noted in acute leukemia of childhood is such that the results cannot be considered coincidental. Those who have had the privilege of investigating the effects of aminopterin therapy have been impressed with the fact that spontaneous remissions have been ruled out. The objective and subjective improvement is excellent. The peripheral blood, including white cells, red cells and blood platelets, returns to normal. Considerable improvement is noted in the bone marrow. About one-fourth of the children treated have a complete remission and all normal activities can be resumed. Another 25 per cent have a partial remission only and the remaining 50 per cent are not affected by the compound. These results have not been duplicated in adults. A communication from one investigator stated, "The treatment of adults with aminopterin is indeed a sad story." Severe untoward reactions such as hemorrhage and aplastic anemia are common in adults.

The therapeutic effect of the folic acid antagonist would seem to indicate that folic acid may be one of the materials concerned in the growth processes of the white cells of leukemia. Possibly other enzymes even more necessary for normal leukocytic development may be discovered and anti-enzymes may be developed that will be useful therapeutically.

Because of the extreme caution necessary in the therapeutic use of aminopterin and other folic acid antagonists, these compounds at the present time are being used only in research centers where complete and careful hematologic data can be obtained. Antifolic acid compounds of less toxicity may be developed. Severe reactions of the mucous membranes and gastro-intestinal tract may occur in addition to severe irreversible bone marrow damage.

These compounds must not be considered as "cures." Even in the most complete remissions leukemic cells may be demonstrated in the bone marrow. However, to quote Dr. Dameshek from a recent editorial, "The knowledge that even a little something can be accomplished in acute leukemia is very heartening news indeed, and a great stimulus for continued investigations."

PRESIDENT'S PAGE

Dear Doctor:

Pride and humility join in the mingled emotions I experience at the beginning of this year. I am proud to represent the most noble profession known to man and humble in the face of the responsibilities the office carries. With your help, with the cooperation of each member, I hope to see the Society continue its progressive course. At least I will do all in my power toward that goal.

The coming year may well bring the crisis on government control, and as such be the turning point for the private practice of medicine as we know it. We will succeed to emerge stronger and of greater service to mankind than ever before, or we will find ourselves reduced to serfdom, enslaved by political vagrancies and at the mercy of a system of patronage.

The victory can be ours not as a result of the voice of organized medicine but through the influence of individual physicians before every other organized group in the land. This year the doctor will not only be asked to care for the sick with the same devotion as always but he will also be called on to serve his community, his state and his nation as an enlightened citizen directing the course of service clubs, farm groups, P.T.A.'s and all other organizations toward the preservation of freedom.

For it is not freedom for the medical profession toward which we are striving, but freedom of all people everywhere. If the members of this Society will perform additional services, beyond the practice of medicine, as citizens of this great nation, the coming crisis may yet be won and democracy may yet be saved together with the private practice of medicine.

That is the ideal toward which we are striving and the objective in which I earnestly and humbly beg your support. I agree with the wise man who said,

"A leader is the best when people barely know he exists. 'Fail to honor people, they fail to honor you.' But of a good leader, who talks little, when his work is done, his aim fulfilled, they will all say, 'We did it ourselves.'"

Whatever is accomplished during the coming year will be accomplished through the cooperation of all members of the Society. I sincerely hope that at the end of this year every doctor in Kansas will say, "We did it ourselves."

Sincerely yours,
Haddon Peck, M.D.

EDITORIAL COMMENT

**A Hearing Conservation Program
and the Small Community**

Tremendous advances have been made during the past 25 years in the diagnosis and treatment of patients with impaired hearing. Improved audiometric testing and its widespread use in our public school system have made it possible to identify the school age youngster with early hearing impairment before it becomes obvious to all concerned that the child is becoming deaf. Such early diagnosis greatly increases the otologist's chances of arresting or reversing the hearing loss.

Addition of the sulfonamides and penicillin to the medical armamentarium has made it possible in the majority of cases to cure the patient with acute purulent otitis media and thus prevent such a condition from becoming chronic with resultant loss of hearing.

Whereas the sulfa drugs and penicillin have done much to control the acute attacks of middle ear infections, they do not prevent the recurrence of such episodes. It is here that irradiation of the nasopharynx has shown such great promise. Reduction in the incidence of the common cold and particularly its pyogenic complications may be effected by the use of radium in the nasopharynx in selected cases. Many cases of early hearing impairment due to long continued partial obstruction to the eustachian tubes by hypertrophic lymphoid tissue have been arrested or reversed by irradiation.

Development of Lempert's one-stage surgical technique for the treatment of otosclerosis is recognized as one of the milestones in the history of otology.

As the result of war discoveries, outstanding advances have been made in the development and use of hearing aids. A properly fitted hearing aid can give a gain of from 40 to 50 decibels and has made possible the rehabilitation of many persons with severe hearing impairment who could not be benefited by other treatment.

The encouragement resulting from these advances has produced throughout the country a renewed interest in the problems of the handicapped person who is hard of hearing. Many of the larger cities have established Hearing Societies as centralized agencies to which the hard of hearing may apply for help and through which sound medical help and advice may be obtained.

Some smaller communities have likewise embarked upon some sort of hearing program. Unlike the larger urban centers, however, the small community frequently lacks adequate funds and competent professional advice to establish a satisfactory hearing program. Inquiries are frequently received

as to what measures should be taken to provide an adequate hearing conservation program, and it becomes apparent that in some cases such a program has been instituted without a proper concept of what a well rounded program should include. It is obvious that any program aimed at the identification of an individual with impaired hearing is useless unless further steps are taken to see that this individual is seen by a qualified otologist who can institute proper medical treatment.

The purpose of this paper is to outline briefly the necessary aspects of a hearing program and its relation to the small community.

The purpose of a Hearing Society should be to establish a program to promote conservation of hearing and to rehabilitate those with impaired hearing. A Hearing Society will consist of a governing board and a director. Whereas the large community may be able to afford a full or part time director or executive secretary, the board in the smaller community may consist of two or three public spirited citizens who volunteer their services. The public health doctor, a local physician or the school nurse may serve as the director. Financial support for the program may be obtained from paid memberships, by personal solicitation of funds or as a part of the Community Chest.

Regardless of the detailed organization, the Hearing Society must have some physical location, a place to which one can come for help. It must encompass the following activities or be prepared to give sound, practical advice as to where the following services can be obtained:

1. Education of the Public. People must be informed as to where the Hearing Center is located, the purpose of the Hearing Society and the services the society is prepared to provide.

2. Psychological Aid. Those who work with the hard of hearing are well aware that many of these individuals present psychological problems. One may get along very well when talking to another individual but find himself at more or less of a complete loss when attempting to carry on conversation in a crowd. He is frequently embarrassed by making irrelevant answers to questions which he did not clearly understand. He may become suspicious, morose and tend to withdraw from all social contacts. Many a hard of hearing patient will need psychological help and guidance.

3. Sociological Aid. This simply means assisting an individual to contend with modern society. The hard of hearing patient is frequently unemployed; this may be the result of the psychological conflicts mentioned above or simply because the individual is

unable to find a job. Many employers are reluctant to hire the handicapped individual. This may require the society's secretary to visit every employment agency in the community and it may even be necessary for some member of the society to intercede directly with an employer. Much can be accomplished to further the rehabilitation of an individual by helping him to find employment.

4. Medical Aid. A community may properly expect a Hearing Society to know where sound medical knowledge can be obtained. Obviously, medical advice will not be available right in the society and perhaps not even in the immediate community. But a complete list of otologists in the community, county and state should be on file and as much pressure as is tactfully possible brought to bear on the individual to see that he gets in touch with a competent otologist.

5. Hearing Aid Consultation Service. It has been variously estimated that from 60 to 80 per cent of the hearing aids purchased by individuals are not worn. Although this figure may be an exaggeration, it is certainly true that many individuals are victims of hearing aid advertisements and purchase hearing aids which are not suitable for them. A general information service about hearing aids will do much to protect the individual and may prevent him from buying an aid without first consulting an otologist.

6. Economic Aid. This involves close cooperation with other agencies in the community which help human beings. It will frequently be necessary to give financial assistance to individuals who cannot themselves afford to journey to distant parts of the state for examination, or to secure medical or surgical treatment or to purchase a hearing aid. The Hearing Society must know where and how such help may be obtained.

7. Lip Reading Instruction. Many hard of hearing persons will find that employment standards make it necessary for them to take lip reading instruction. Many children have suffered damage to the inner ear at an age prior to the development of normal speech patterns; the most important factor in the education of these youngsters is the development of a means of communication. Approximately 30 per cent of children with congenital hearing defects have some residual hearing which can be reached and utilized by acoustic methods of speech training. This fact serves to emphasize the necessity for providing lip reading instruction in the hearing program.

8. Testing of School Children. Hearing tests alone do not constitute an adequate conservation of hearing program; however, it is probably the most important single part of such a program. The Com-

mittee on the Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology has recommended that every child's hearing be tested each school year. It is recognized, however, that such an ideal may be difficult or impossible to accomplish. As a practical alternative, each child should be tested every third year. If this plan is adopted, the first, third, sixth and ninth grades could be tested each year plus those children from other grades who have been previously found to require attention. The test should comprise (1) a medical history, (2) an otolaryngologic examination and (3) the audiometric examination.

Two types of instruments for testing the hearing of school children are in general use at the present time: (1) the phonograph speech audiometer and (2) the pure tone audiometer. The phonograph speech audiometer has unfortunately been installed in many schools to meet the need for rapid mass testing of large numbers of school children. The author has previously emphasized that it is essential, if treatment is going to be successful, to recognize the very earliest signs of hearing impairment, when the loss is still confined to the very high tones and does not yet involve the conversational range. Obviously then, the phonograph speech audiometer is not a satisfactory instrument with which to test the hearing of school children. This requirement can only be met by the use of the pure tone audiometer. Testing with the discrete frequency audiometer will reveal the presence of high frequency losses which are not detectable with the phonograph instrument now in use.

Regardless of the size of the community, a Hearing Society should provide these eight services; there may be others but those listed are considered to be essential. The main purpose of any Society should be to see that deafened people participate in so far as possible in the normal life of the community.—
E. La Monte Gann, M.D., Emporia, Kansas.

Aureomycin

Because of the advancements recently made in antibacterial chemotherapy, laboratory investigators are beginning to express confidence that some day a series of harmless drugs of precise specificity will be available to destroy every bacteria that threatens the life or health of man. These discoveries are revolutionizing the practice of medicine not only in the light of clinical practice but in the knowledge that is being acquired with reference to the cell, its structure, its metabolism and its life. So rapidly are new drugs placed on the market that their employment in the treatment of disease is frequently far

ahead of the fundamental understanding of the underlying principles involved.

Such is the case with reference to aureomycin. In fact the pharmaceutical houses experimenting with this drug have not yet published data concerning its spectrum or its toxicity. Even though the first brief articles on this subject are only now appearing, many Kansas physicians have already had experience with the drug in clinical practice.

Aureomycin was isolated by Duggar from a streptomyces species within the last few months. It has been found to be effective against streptococci and staphylococci, *Diplococcus pneumoniae*, several gram-negative species and the brucella group. It has also been found to have a marked anti-rickettsial action and is effective against several virus infections. In ocular infections such as staphylococcal conjunctivitis, it is found to be at least as effective as penicillin and produces no irritation or other toxic effects. Brucellosis, typhoid fever, urinary tract infections caused by the coli-Aerogenes group, *S. faecalis* and other bacterial infections have responded to aureomycin. Most remarkable, however, are the results obtained in Rocky Mountain spotted fever, typhus and scrofula.

It is too early to evaluate the ultimate place aureomycin will hold in the field of antibiotics, but present indications, despite the lack of an obvious rationale, give rise to the hope that here may be the most effective drug yet known for the treatment of rickettsial and virus diseases. Local physicians who have used aureomycin report satisfactory results similar to those currently found in the literature. The profession should be reminded at this time, however, that the drug is expensive, that it is still in its earlier experimental stages, and that widespread usage might best be delayed until considerably more information has been obtained.

Radioisotopes Available for Research

Qualified cancer research workers in the United States may now obtain radioisotopes without charge, according to a recent announcement by the United States Atomic Energy Commission.

Under a program inaugurated in March 1948, three radioisotopes, those of the elements iodine, phosphorus and sodium, were first made available. The new policy will add more than 50 additional elements to those three. Notable among these is the element cobalt, which promises to become an effective substitute for radium, the rare and expensive substance that has been used in cancer research and treatment for many years. Two other important materials now available are the radioisotopes of the elements gold and carbon.

A sum of \$450,000 has been set aside to defray the cost of the new program during its first year of operation. The same careful controls over the distribution program now in effect will be continued. Applicants for materials must fulfill the requirements of the Atomic Energy Commission and must offer assurance that there will be no resale or charges to patients for the isotopes procured under the program. A committee composed of leading physicians from hospitals and research institutions in this country has been formed to study applications and has established the following criteria:

1. A physician using the materials must be associated with a medical institution, hospital or clinic or other medical organization possessing adequate facilities for the proper use of such materials.
2. The use of the materials must meet with the approval of a local isotope committee of the hospital or medical institution with which the physician is associated.
3. Clinical users of the materials must be physicians in good standing with their local medical societies and must have had previous clinical experience with radiation or be directly collaborating with individuals possessing such experience.

The distribution of isotopes is administered by the Isotopes Division, U. S. Atomic Energy Commission, Oak Ridge, Tennessee.

New Board Accepts Applications

The American Board of Preventive Medicine and Public Health, Inc., approved by the advisory board for medical specialties and by the Council on Medical Education and Hospitals of the A.M.A. on February 6, is now prepared to accept applications for examination for certification.

The requirements for certification include general qualifications, such as moral and ethical standing in the profession, adequate training in medicine and internship in an approved hospital, and licensure to practice medicine in the United States. Eligibility for examination also requires that the applicant have special training and experience in preventive medicine and public health of at least six years following internship. This must include special academic training, or its equivalent, and field training or residency meeting the standards set up by the Board.

Applications will also be accepted for the Founders Group, who may be excused from examination. The group includes practitioners of preventive medicine and public health who have attained unquestioned eminence in the field.

Complete information may be secured from the secretary of the Board, Dr. Ernest L. Stebbins, 615 North Wolfe Street, Baltimore 5, Maryland.

Case Reports From The University of Kansas Medical Center*

Edited by R. E. Stowell, M.D., and E. B. Taft, M.D.

Tumor Clinic Case No. 48-18

HISTORY: P. P., a 58-year-old woman, was admitted to the University of Kansas Medical Center in July, 1948. She entered the hospital for study and possible excision of an intrathoracic mass first discovered four years previously on routine photo-fluoroscopic examination. She was well developed and well nourished and presented no evidence of illness.

LABORATORY STUDIES: These were non-contributory.

X-RAY STUDIES: Three years prior to admission a chest x-ray revealed a smooth rounded density about the size of a lemon projecting from the mediastinum into the lower portion of the right thoracic cavity. X-rays made at this hospital (Figure 1)

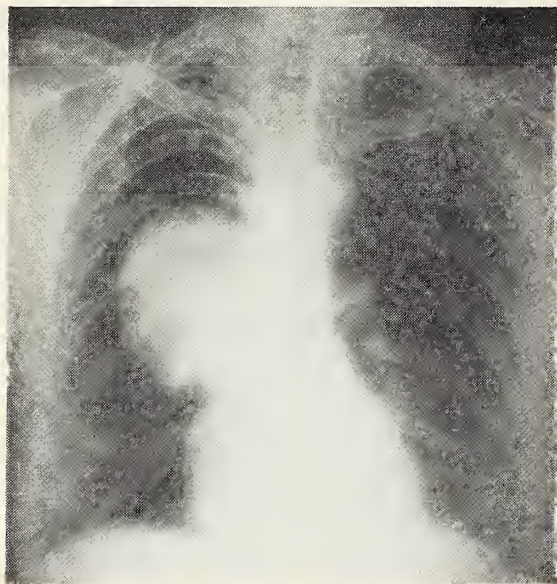


Figure 1

one month prior to admission showed that the lesion was similar in appearance and location, but that it had grown to the size of an orange. There was no other evidence of intrathoracic disease.

COURSE: On her fourth hospital day she underwent a right thoracotomy. A large encapsulated tumor was found which apparently arose from the seventh intercostal nerve approximately three centimeters from its exit from the vertebral column. The tumor was completely removed with the proximal segment of the nerve. The capsule of the tumor was adherent to the posterior chest wall and ribs, to the vertebral column and to the lower lobe of the right lung. The patient developed a moderate hydrothorax

following surgery which required two thoracenteses. Her postoperative course was otherwise uneventful except for elevations of temperature to 101-102°F for the first few days following operation.

Dr. Beller: This patient was of considerable interest because of her x-ray findings. Tumors of the mediastinum are not too common and always present a problem in roentgenological diagnosis. With a lateral film one can usually place them in a certain portion of the mediastinum. In the anterior mediastinum, teratomas are more common; in the middle, lymphomas; and in the posterior portion, neurofibromas. Since this appeared to be a solitary lesion, and was located in the posterior portion of the mediastinum, this was the diagnosis we suggested. The only other types of tumor which might give rise to a similar picture would be a pleural cyst or possibly a bronchial cyst. Such problems can usually be clarified only by surgery.

Dr. Hamilton: Pathological examination of the tumor removed from this patient revealed a histological picture somewhat different from that usually seen in neurofibromas. In addition to the most common constituents there are cells with granular cytoplasm which are not typical fatty macrophages. Fust and Custer of Philadelphia suggest that such tumors be called granular cell neurofibromas.

Discussion

Student: Was this tumor thought to be derived from the sympathetic chain or from a peripheral nerve?

Dr. Shirer: It appeared to arise from the seventh intercostal nerve. In fact, one of this patient's presenting symptoms was pain along the course of the involved nerve.

Dr. Robinson: Tumors of neural origin arising in the posterior mediastinum are not necessarily always of the relatively benign type.

Student: What is the incidence of malignancy in tumors of the posterior mediastinum?

Dr. Robinson: In 1940 when a child with a neuroblastoma of the posterior mediastinum died of general metastases here, there were approximately 70 cases of neurogenic tumors of the posterior mediastinum in the literature of which only three or four had proved to be malignant. Thus, it would seem that the incidence of malignant tumors of the posterior mediastinum is low.

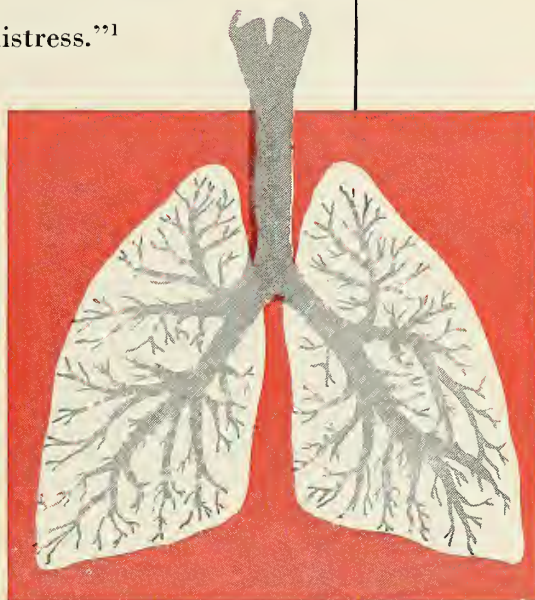
Tumor Clinic Case No. 48-30

HISTORY: D. W., a 28-year-old woman, was admitted to the University of Kansas Medical Center in September, 1948, with the chief complaint of

*Cancer teaching activities aided by a grant from the National Cancer Institute.

paroxysmal dyspnea...

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SEARLE RESEARCH IN THE SERVICE OF MEDICINE



1. Murphy, F. D.: Treatment of Cardiovascular Emergencies in the Home. Wisconsin M. J. 42:769 (Aug.) 1943

convulsions for one and one-half years prior to admission. Initially these occurred two to three times a week, but during the six months prior to admission they occurred but once a week on the average. The convulsions were typically Jacksonian. They were characterized by an aura, a numbness in the left foot which spread to involve the left side of the body. When this feeling of numbness reached the face, the patient stated that she would have a generalized convulsion usually involving both sides of the body with tonic and clonic movements of the extremities. These convulsions were followed by a loss of consciousness and occasionally loss of bladder control. The duration of each episode was not more than five minutes as a rule. She has also had severe headaches, unrelated to her convulsions, which characteristically were of two to three hours duration and not relieved by aspirin. She had been taking large amounts of dilantin for approximately one year prior to admission with little relief from her convulsions.

PHYSICAL EXAMINATION: The patient was a well developed, well nourished white woman who was fairly cooperative and who dragged her left foot when walking. She had diminished vision. Examination of her eyegrounds showed evidence of long-standing papilledema and secondary optic atrophy. Her visual fields were somewhat constricted. She had hypesthesia and loss of position sense on the left, more marked in the leg than in the arm. She had an elusive ankle clonus and a questionable Babinski on the left. She had a positive Romberg sign with the eyes open or closed.

LABORATORY STUDIES: These were non-contributory. A lumbar puncture yielded normal fluid under normal pressure.

X-RAY STUDIES: There was an area of increased bone production starting at the vertex of the skull and involving the right parietal bone (Figure

2). This hyperostosis extended posteriorly almost to the lambdoid suture. There was evidence of increased vascularity in the frontal area. The clinoids were not satisfactorily viewed on the usual films. A true lateral view of the middle fossa showed depression of the floor of the sella, complete disappearance of the posterior clinoids and partial erosion of the anterior clinoids. To explain this finding a tumor involving the middle fossa of the skull was postulated. Since there was no evidence of calcification which would be expected with a craniopharyngioma, it was suggested that the patient might have a tumor of the nasopharynx which had invaded the floor of the skull to produce these x-ray changes.

COURSE: A consultation was requested from the Ear, Nose and Throat Service because of the x-ray findings, even though there was no clinical evidence for a tumor of the middle cranial fossa. No tumor was found. At operation a burr hole was made in the right parietal area. Tumor was encountered with a ventriculography needle so that a bone flap was turned without making ventriculograms. Incision of the dura revealed a tumor which was encapsulated and apparently arising from the dura. It was removed with a segment of dura. The excess bone was removed from the flap, the bone was boiled for ten minutes and replaced. The first post-operative day the patient had partial anesthesia of her left side with partial loss of motion of the arm and complete paralysis of the leg. She improved rapidly and was dismissed on her eighth postoperative day with almost unlimited motor activity and but slightly diminished sensory perception on the left.

Dr. Wahl: This is an extremely interesting specimen. The tumor is as large as a good sized apple, one of the largest tumors of this sort I have ever seen. One wonders what happened to the brain tissue which was displaced by this tumor.

Grossly, the tumor is firm and well encapsulated, a typical meningioma. On microscopic section the picture is not so consistent. In much of the tumor, one sees the typical whorls of spindle-shaped cells with many psammoma bodies. In other areas there are foci of atypical cells.

Dr. Williamson: There are two interesting features of this patient's history which deserve further comment. In the first place it should not have taken this patient one and one-half years to get to a neurosurgeon. Focal fits or Jacksonian fits of the type this patient had should never be diagnosed as ideopathic epilepsy and treated as such. The frequency of the fits of itself should have pointed toward the possibility of a local lesion in the brain. As well as having this type of seizures, the patient had been developing other signs of a focal lesion in her brain. She dragged her left foot; she had limited use of the

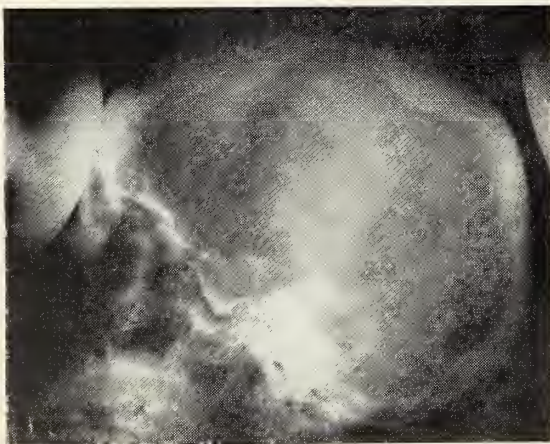
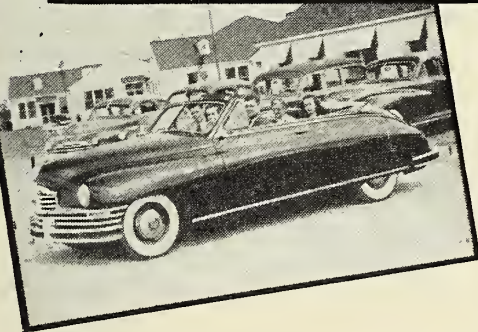


Figure 2

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Psychiatrist-In-Chief

Orin R. Yost, M.D.

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SOUTH CAROLINA

left arm; her left foot and arm had diminished sensory perception and she had strange feelings on her left side. All of these findings point to a local lesion.

The second unusual feature of this case were the misleading findings observed on the x-ray films, which disturbed us quite a bit. On the basis of the films the diagnosis of an erosive tumor of the base of the skull is certainly justified. This brings up a fact which is not generally recognized. Many patients are sent to the neurosurgeon with the diagnosis of pituitary tumor because of roentgenological evidence of erosion of the sella turcica. Not more than five per cent of these have pituitary tumors, however; most of them have tumors elsewhere. The findings are many times the result of long-standing increased intracranial pressure. One of the most consistent findings in patients with longstanding increased intracranial pressure in fact is enlargement of the sella turcica, sometimes with erosion of the posterior clinoids and thinning of the floor of the skull. If the clinoids happen to be small, they may disappear altogether. Dr. Tice showed me these films before I saw the patient. The diagnosis in this patient was very difficult on the basis of the x-rays alone.

However, when one saw the patient, the diagnosis of a tumor involving the base of the skull was untenable. To have a tumor large enough to have produced the x-ray changes discussed previously, one would have had involvement of the various foramina in that region—the rotundum, the ovale, the spinosum and possibly the jugular—with involvement of the cranial nerves which pass out these foramina. There was no clinical evidence of involvement of any of these nerves except for somewhat diminished vision. She had no numbness or pain in her face, no paralysis of chewing, and no difficulty in swallowing. Neurologically her picture was one of involvement of the parietal lobe with some evidence of frontal lobe involvement on the right. That is, there was weakness and some sensory loss in the extremities on the left. By x-ray we have this clear picture of hyperostosis exactly where we felt the lesion must be.

Thus we did not pay too much attention to the erosion of the base of the skull except to realize that it was evidence of longstanding increased intracranial pressure. The decrease in the patient's visual fields which was the result of papilledema with secondary optic atrophy is further evidence of increased intra-cranial pressure and should not be considered as possible evidence for some basilar tumor such as a craniopharyngioma or a pituitary adenoma. With such lesions she would have had much more severe visual defects and primary visual symptoms rather than parietal symptoms.

At the time of operation we were almost certain

that we would find a meningioma and that we could localize it without doing a ventriculographic study. Therefore we did the operation under local anesthesia and had four pints of blood ready because these tumors are apt to be exceedingly vascular. Even though they are favorable brain tumors from the standpoint of the possibility of complete excision and cure, they may be technically difficult to manage. These tumors frequently invade dural sinuses and if the sinus has not thrombosed prior to operation so that it can be removed, then one may be unable to completely rid the patient of the tumor at the time of first operation. In such instances, the sinus may become obstructed later and after collateral circulation has been established, the sinus may be removed. Fortunately in this patient the wall of the sagittal sinus was not involved.

Parasagittal meningiomas are quite common. They are usually easy to diagnose because such patients have Jacksonian fits and frequently show x-ray evidence of involvement of the overlying bone as in this patient. I have one patient who has had his entire sagittal sinus, from the torcula forward three inches, removed because of involvement with tumor at the time of a second operation. He has no symptoms because of that interrupted venous circulation.

Postoperatively this patient developed a mild cerebral edema as was to be expected. But within a week she was out of bed walking and except for moderate foot drop she returned almost to normal. I had a letter from her a few days ago in which she said she has had no neurological difficulties. She had one convulsion in the hospital postoperatively. She may have fits in the future even though her tumor is in all probability completely removed. That is one of the most disappointing features of the treatment of patients with meningiomas. Although one removes the tumor, the scar in the tumor bed may continue to cause focal fits. Patients in such a situation are apt to think the surgeon has not helped them very much. Approximately 50 per cent of patients with a story similar to the present patient continue to have focal fits. As a rule, however, phenobarbital will control such fits fairly satisfactorily. This patient's prognosis is good.

Reference

Fust, J. A., and Custer, R. C.: Granular Cell "Myoblastomas" and Granular Cell Neurofibromas: Separation of Neurogenous Tumors from the Myoblastoma Group. *Am. J. Path.* 24, 674, 1948.

Error in Drug Name

Dr. Ralph H. Major, of the Department of Internal Medicine, University of Kansas Medical Center, advises that the word "khellin" was employed in his scientific paper in the March issue of the *Journal*, "Khellin in Bronchial Asthma." The correct form which should have been used is the name "khellinin."

If she is one
of your patients



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ACTIVITIES OF MEMBERS

Dr. J. F. Hassig, Kansas City, observed his 50th anniversary as a physician and surgeon in that city on March 28. He was graduated from the Kansas City College of Physicians and Surgeons on that day in 1899, interned at St. Margaret's Hospital, and began private practice in 1900.

* * *

Dr. E. D. Liddy, Lawrence, announces that Dr. James W. Campbell is now associated with him in the practice of internal medicine. Dr. Campbell was graduated from the University of Kansas School of Medicine in 1940, served four years in the Army after his internship, and took postgraduate training for two years before moving to Lawrence.

* * *

Dr. Daniel L. Tappen, formerly resident physician and member of the faculty at the University of Oklahoma, has opened an office in Topeka for the practice of obstetrics and gynecology.

* * *

Dr. Paul W. Schafer, associate professor of surgery and oncology at the University of Kansas School of Medicine, will become chairman of the Department of Surgery on July 1. He will succeed Dr. Thomas G. Orr, Sr., who has been head of the department since 1924 and a member of the faculty since 1915. Although Dr. Orr is giving up administrative duties, he will continue teaching and research work at the medical center.

* * *

Dr. C. W. Lawrence, Emporia surgeon, has announced his retirement after 43 years of practice. He was given honorary membership in his county and state medical societies and honorary staff membership in both Emporia hospitals.

* * *

At a recent meeting of the American College of Physicians in New York Dr. Harold H. Jones, Winfield, was named to the Board of Regents and Dr. William Menninger, Topeka, to the Board of Governors.

* * *

Dr. F. P. Riley, who has been practicing in St. Marys for 28 years, has announced that he will move to Perryville, Missouri, to practice there.

* * *

Dr. D. A. Bitzer has returned to his office in Washington after attending a course on atomic isotopes at the Navy Medical Center, Bethesda, Maryland.

* * *

A \$10,000 endowment honoring the late Dr. Samuel S. Murdock, Sabetha, has been given the University of Kansas Endowment Association by

Mrs. Flora Murdock, widow of the physician. In 1947 Mrs. Murdock gave a \$5000 memorial fellowship in surgery, and the new endowment is to be added to that fellowship.

* * *

Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, was chosen "outstanding young man of the year for the state of Kansas" by the Junior Chamber of Commerce of the state at a meeting held in Salina in March.

* * *

Dr. E. LaMonte Gann, who has been practicing in Kansas City, has moved to Emporia to be associated in practice with Dr. D. P. Trimble. Dr. Gann will specialize in ear, nose and throat work and Dr. Trimble will continue to do eye work.

* * *

Dr. Carleton H. Lee, formerly of Kansas City, Missouri, has opened an office in Hutchinson for the practice of pediatrics.

* * *

Dr. R. L. Drake, Wichita, recently became a member of the American Academy of Neurology.

* * *

Dr. Clay E. Coburn, Kansas City, recently celebrated his 50th anniversary in the practice of medicine. A party at the Kansas City Club on March 20 marked the observance of the anniversary, and Dr. Coburn was also guest of honor at a luncheon given by the staff and board of trustees of Bethany Hospital.

* * *

Dr. Robert V. Kirk is a new member of the staff of the Horton Clinic, now occupying a new building there. Others in the clinic are Dr. G. M. Edmonds, Dr. Alfred G. Dietrich, and Dr. E. L. McCorkle.

* * *

Dr. G. R. Hastings, Garden City, Dr. F. L. Loveland, Topeka, and Dr. John Porter, Concordia, were recently reappointed to the Kansas State Board of Health for three-year terms expiring March 31, 1952.

* * *

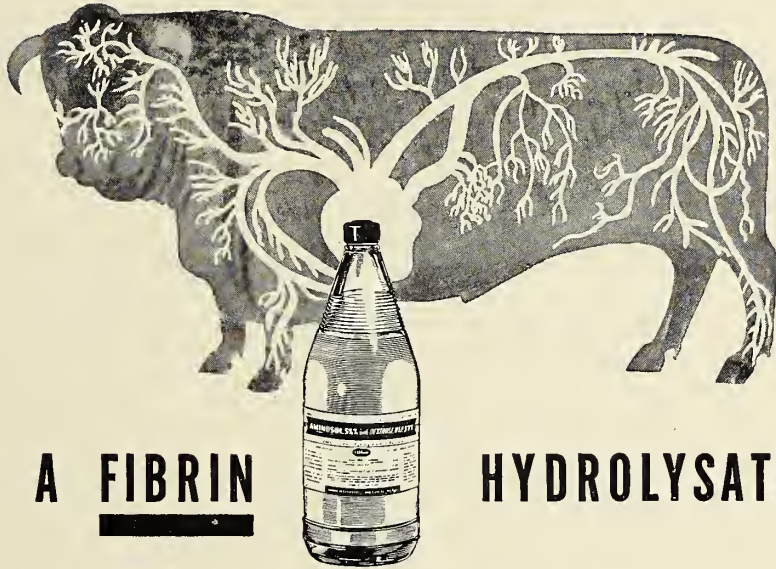
Dr. Austin J. Adams, formerly with the Veterans Administration Hospital in Wichita, has opened an office for the practice of psychiatry in Wichita.

* * *

Dr. Chester O. Shepard, Independence, recently closed his office to take a rest and to take postgraduate work at the University of Illinois School of Medicine.

* * *

Dr. Thomas R. Hood, former Cowley County health officer who is now taking postgraduate work at Harvard University, is the author of an article on public health work with children, printed in the February issue of the Kansas Teacher.



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1. Christensen, H. N., Lynch, E. L., Decker, D. G., and Powers, J. H. (1947), The Conjugated, Non-Protein, Amino Acids of Plasma.

IV. A Difference in the Utilization of the Peptides of Hydrolysates of Fibrin and Casein, J. Clin. Invest., 26:849, September.

Dr. Earle G. Brown of Mineola, Long Island, New York, a former president of the Kansas Medical Society, will be honored by his alma mater, Baker University, on June 6 when he is awarded an Honorary Doctor of Science degree.

* * *

Dr. E. W. Crow recently completed a residency at Wesley Hospital, Wichita, and is now engaged in private practice in the Beacon Building, Wichita.

* * *

Dr. R. T. Nichols, Hiawatha, was appointed grand junior deacon of the Ancient, Free and Accepted Masons of Kansas at a meeting held in Wichita recently.

* * *

Dr. A. W. Feghtly, Wichita, and Dr. D. L. Evans, Manhattan, were Kansas delegates to the first scientific assembly of the American Academy of General Practice, held in Cincinnati in March. Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, appeared on the program to explain the Kansas Rural Health Plan.

* * *

Dr. Roy F. Drake, Council Grove, has been appointed health officer of Morris County.

* * *

Dr. H. Penfield Jones and Dr. Raymond L. Pendleton, Lawrence, are now associated in practice, specializing in surgery, gynecology and obstetrics.

* * *

Dr. Guy L. Millington, Girard, has announced his retirement after 49 years of practice. He first practiced in Clarksville, Missouri, then in Wellington, and in 1921 he opened an office in Girard.

* * *

Dr. G. L. Campbell, Arkansas City, recently became a diplomate of the American Board of Surgery.

* * *

Dr. Ross E. Weaver, who has been doing anesthesiology and radiology at St. Joseph Hospital, Concordia, announced last month that he is retiring from medical practice because of poor health.

* * *

Dr. Orville S. Walters, McPherson, recently took a course in advanced electrocardiography given by Dr. A. M. Master at Mount Sinai Hospital, New York, and attended sessions of the American College of Physicians in New York.

* * *

Dr. L. Lafe Bresette, Kansas City, was elected last month to serve as president of the Chamber of Commerce of that city.

* * *

Dr. C. E. Bandy, Bucklin, who has practiced in that community many years, was guest of honor at a community celebration on April 3.

Dr. Frank James is now serving as mayor of the city of Galena.

Heart Association Sponsors Research

Research awards totalling \$250,000 have been allocated by the American Heart Association to 26 investigators and six medical schools and hospitals for studies in heart and circulatory disease, according to a recent press release. Award selections were made from among 121 requests totalling \$1,400,000.

Study of School Health Services

The American Medical Association, in cooperation with the U. S. Office of Education, is making a study of school health services through local medical societies. The survey is a preliminary step in efforts designed to bring about improvement of school health programs within the framework of the private practice of medicine. At the time the A.M.A. is compiling information from medical societies the Office of Education is gathering data from the schools of the nation.

Change in Board Regulations

The American Board of Orthopedic Surgery, Inc., announces that new regulations will go into effect for applicants filing for examination in 1951. At that time applicants must meet the following minimum qualifications: completion of an internship, a year of resident training in general surgery and two years of resident training in orthopedic surgery on an approved service.

Medical Grants to K.U.

The University of Kansas was recently awarded two federal grants totaling \$22,300 for medical research, as part of a program designed to provide new scientific data on a wide variety of human ailments. The grants were recommended by the National Advisory Health Council and approved by Surgeon General Leonard A. Scheele of the Public Health Service, and will cover 175 separate projects in non-federal institutions in 30 states.

The first grant to the University of Kansas appropriates \$15,300 for a study of factors associated with reproductive failure in mammals. The study is directed by Dr. William C. Young of the Department of Anatomy at Lawrence.

A grant of \$7,000 is allotted to Dr. Paul W. Schafer, also of Lawrence, for a study on the influence of the autonomic nervous system on gastric secretion and motility, a project on which Dr. Schafer has been working for two years.

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COUNTY SOCIETIES

The Lyon County Medical Society held a joint meeting with the Kansas Society of Anesthesiology at the Broadview Hotel, Emporia, March 1. Dr. Thomas P. Butcher presided and introduced the speaker, Dr. John W. Pender of the Mayo Clinic, Rochester, Minnesota, who spoke on "Anesthesia for Abdominal Operations." Announcement was made of the retirement of Dr. C. W. Lawrence, Emporia surgeon who had practiced there for 43 years, and Dr. Philip W. Morgan presented him with honorary membership cards for the county and state medical societies and the staffs of the two Emporia hospitals.

* * *

Dr. O. W. Davidson, Kansas City, was guest speaker at a meeting of the Cowley County Medical Society held at the Arkansas City Country Club on February 17. Dr. Davidson, president of the Kansas Medical Society, told of the Society's plans for the year and outlined the rural health program recently enacted by the Kansas legislature. The wives of the doctors were also present at the dinner meeting and made plans for the organization of an Auxiliary group.

* * *

The Washington County Society held a dinner meeting at the Bon Ton Cafe, Washington, February 9. Dr. Hugh Hope of Hunter, councilor for the district, was a guest.

* * *

The Atchison County Society met March 1 at the Hotel Atchison. Dr. Ralph Major, head of the Department of Medicine at the University of Kansas Medical Center, presented a scientific discussion on asthma, and a movie on the treatment of pulmonary tuberculosis was shown.

* * *

The Midwest Kansas Medical Society was organized at the Gateway Country Club, Great Bend, on February 23 with 48 charter members attending from Barton, Ellis, Rice, Reno, Pratt, Pawnee, Ellsworth, Stafford, Edwards, Rush and Ness Counties. Membership is open to all physicians in the area, and three or four dinner meetings are planned for each year.

Dr. Clark Zugg, Great Bend, was named president, and he will be assisted by Dr. J. R. Campbell, Pratt, vice president, and Dr. Justin Blount, Larned, secretary.

The program for the evening was presented by Dr. Thomas T. Meyers of the Mayo Clinic, professor

of vascular surgery, who presented a scientific discussion with illustrated slides.

* * *

Dr. John Lamb, assistant professor of dermatology at the Oklahoma University School of Medicine, was guest speaker at a meeting of the Sedgwick County Medical Society held at the Broadview Hotel, Wichita, March 8. At the next meeting, on April 5, Dr. G. F. Corrigan, Dr. F. J. McEwen, Dr. R. L. Drake and Dr. R. H. Maxwell, all of Wichita, presented a symposium on "Laboratory Medicine—Its Advantages and Limitations."

* * *

The Shawnee County Medical Society met March 7 with Dr. Robert Lowe, assistant professor of medicine at the University of Oklahoma, as guest speaker. He discussed "Clinical Aspects of Liver Function Tests in Hepatic Diseases."

* * *

A meeting of the Butler County Society was held March 14 at the Hotel El Dorado, El Dorado. Dr. H. J. Brown of Winfield presented a scientific paper on anesthesia.

* * *

The Cowley County Society met in the new tuberculosis ward at the State Training School, Winfield, on March 24. Dr. C. F. Taylor, Norton, presented a paper on "Streptomycin in the Treatment of Tuberculosis." The Women's Auxiliary held its organization meeting and election of officers at the same time, and after their separate business sessions the two groups were entertained at a social meeting by Mr. L. C. Tune, superintendent of the school, and Mrs. Tune. Dr. and Mrs. Charles H. Miller, Parsons, were guests at the meetings.

* * *

The Central Kansas Medical Society entertained members of the Auxiliary at a dinner meeting at the Ellsworth Country Club March 24. Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, was guest speaker.

* * *

Members of the Geary County Society were hosts to the Golden Belt Medical Society at a meeting held at the Junction City Country Club on April 6. Dr. E. H. Hashinger, Kansas City, Missouri, spoke on "Endocrinology" and Dr. Earl Mills, Wichita, discussed "Hematology."

* * *

A meeting of the Crawford County Society was held at the Hotel Besse, Pittsburg, March 31. Dr. Carlos Peete, University of Kansas Medical Center, spoke on "Coronary Disease" and "Psychosomatic Involvement."

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BOOK REVIEWS

Doctors of Infamy—The Story of the Nazi Medical Crimes. By Alexander Mitscherlich, M.D., and Fred Mielke. Translated by Heinz Norden. Published by Henry Schuman, Inc., New York. 171 pages, 24 illustrations. Price \$3.00.

The unbelievable inhuman and thoroughly documented activities of a segment of the German medical profession during the war are here set down in this small volume in an objective manner. Although the culprits have been duly tried, found guilty, and executed, the fact that educated human beings could so pervert their processes of thought as to initiate and participate in such sadism under the guise of scientific research leaves one still wondering how far the human race has actually progressed morally and emotionally. Here, written out for all to see, is the picture of what can happen to a highly educated race of people when human rights are stamped out and the citizen becomes nothing more than a tool of the state. The implications of this sordid chapter in history should be crystal clear to those who would remember the series of steps preceding the complete moral breakdown of large segments of the German people.

This book provides a good reminder for those who would forget that the veneer which identifies us as human beings is really quite thin and that we must constantly be alert to protect it lest we ourselves be victims of a like situation.—F.D.M.

* * *

Symptoms in Diagnosis. Second Edition. By Jonathan Campbell Meakins. Published by Williams and Wilkins Company, Baltimore, Maryland. 542 pages, 112 illustrations. Price \$7.50.

The second edition continues to be a successful effort to assist the student in his evaluation of the patient by approaching the problem from the standpoint of symptom complexes rather than the classical one of disease entities. This rearrangement of material should serve to stimulate the student to reorganize his already acquired factual knowledge into a more useful clinical tool. The immense amount of ground covered imposes certain limitations of depth in dealing with each symptom. This, perhaps, increases the value for the beginner by avoiding confusion in controversial details. The completeness of the survey of the field has been maintained by the addition of four chapters by several of the author's colleagues on symptoms involving specialized branches of medicine. The last chapter on psychiatric symptoms seems particularly well done considering the limitations of space.—W.L.C.

Atlas of Peripheral Nerve Injuries. By William R. Lyons, Ph.D., and Barnes Woodhall, M.D. Published by W. B. Saunders Company, Philadelphia. 339 pages, 135 plates. Price \$16.

This comprehensive atlas of peripheral nerve injuries is based upon the study of a large number of neurosurgical cases, gleaned from two military hospitals during the recent war. The history of the peripheral nerve and the pathology of complete and partial lesions during different stages of degeneration and regeneration are clearly presented. The technique of the histologic methods used is described in detail and the same uniform technique is followed through the various pathologic stages. The 135 plates contain from two to seven large, clear illustrations which show photographs of the injured limbs, pictures of the lesions exposed at operation, some

DEATH NOTICES

PAUL REICHARD WEBSTER, M.D.

Dr. Paul R. Webster, 51, specialist in diseases of the eye, ear, nose and throat, died February 16 at his home in Leavenworth. He was graduated from the University of Kansas School of Medicine in 1922, and took post-graduate work in New York before opening an office in Leavenworth. He was a member of the Leavenworth County Medical Society.

* * *

DONALD RAY DAVIS, M.D.

Dr. D. R. Davis, 36, physician and surgeon in Dodge City, died March 4 in a Wichita hospital after an illness of two months. After his graduation from the University of Southern California School of Medicine in 1939, he practiced in Dodge City until he entered the Army medical corps. He returned to Kansas after two years service and specialized in surgery. He was a member of the Ford County Medical Society.

* * *

JAY BAIRD, M.D.

Dr. Jay Baird, 78, who had practiced in Coffeyville since 1904, died at his home there March 19. He was an active member of the Montgomery County Medical Society and since 1921 had been prominent in Red Cross activities in the county. He received his medical education at the Eclectic Medical College, Cincinnati, graduating in 1900, and had practiced in Silver Creek, Nebraska, and Chanute, Kansas, before opening his office in Coffeyville.

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roentgenographs, and a large number of gross and microscopic sections, many in color.

The subjects of nerve grafts and sutures are considered. Although the book is primarily an atlas with a complete description of the figures on each plate, the chapters are introduced by a well documented review of the literature, and chapter sub-headings present a discussion of the material shown in the plates. A glossary clarifies the terminology used throughout the book. A bibliography of 190 references is appended and the book is well indexed.

This book will be indispensable to the pathologist who has occasion to study peripheral nerves. It can be highly recommended to the neurologist, the neurosurgeon, and any other physician who has to handle traumatic nerve injuries.—*A.T.S.*

* * *

Clinical Case Taking. Fourth Edition. By George R. Herrmann, M.D., Ph.D. Published by C. V. Mosby Company, St. Louis. 240 pages, 8 illustrations. Price \$3.50.

The author has adeptly combined a manual of history taking and physical examination with a discussion of other methods of diagnosis in a small volume which might serve equally as a guide to the student and as a reference source to the practitioner. The science of case-taking procedures is outlined and discussed, and there are many useful hints in the art of history taking, and dealing with patients in general. An extensive outline of the approach to the diagnosis of disease of the various systems of the body is given by chapters devoted to each of the systems. Sections relating specifically to obstetrics, pediatrics, and surgical cases are followed by an appendix which enlarges on the details of common symptoms.—*M.S.A.*

* * *

Handbook of Diseases of the Skin. By Richard L. Sutton, Sr., M.D., and Richard L. Sutton, Jr., M.D. Published by C. V. Mosby Company, St. Louis. 749 pages, 1057 illustrations. Price \$12.50.

A completely new Sutton book on skin diseases has been written. Richard L. Sutton, Sr., is still recognized as senior author on the title page; however, the cover carries only the single name, Sutton. The present book is larger than *Synopsis of Diseases of the Skin* and smaller than *Introduction to Dermatology*. The first 63 pages are devoted to introductory chapters dealing with anatomy, embryology, physiology, pathology, etiology, diagnosis and treatment. The remainder of the book is divided into 16 chapters using etiology as the basis of classification.

In spite of its relatively small size for a book devoted to diseases of the skin, it is amazingly com-

plete and, as the author states, almost everything is mentioned. This has been accomplished by the use of large and small print. The small print has been reserved for more detailed elaboration on common conditions and the discussion of the rarer conditions. A phenomenal number of references is given, which makes the book of value to the specialist and will also be appreciated by the practitioner. The references are included in the text rather than in footnotes or at the end of the chapters. This at times tends to interfere with the continuity of reading, but the advantage of having references readily at hand compensates for any inconvenience.

Over 1000 excellent photographs, including numerous photomicrographs, are used to illustrate the book. The printing, binding, and paper are of the highest quality. The text is comprehensive and clearly written. The standard nomenclature is adhered to but synonyms are listed where indicated.

Treatment discussions are clear and concise. Methods and drugs other than the author's are included; however, he is not hesitant in giving his opinion of their efficacy. Of particular interest is his approach to the problem of contact dermatitis. At first glance it strikes one as a rather formidable and nearly impossible regime, but on closer consideration it appears logical and much surer to succeed than the usual hit-and-miss approaches used. Prescriptions are held to a minimum and are apparently the ones found most useful by the author. More recent graduates, at least, will be pleased to find them written in English and calculated in the metric system.

The author was faced with the dilemma of what constitutes the present treatment of syphilis and handled it very well. The emphasis, of course, is on penicillin, but the older treatment forms have not been ignored. He places himself in the group which still believes that there is a very definite place for fever therapy in the treatment of this disease.

A new section on psychosomatic dermatology is included, but one feels that the author had his tongue in his cheek when it was written.

The book is well qualified to join the Sutton family of excellent books on disease of the skin. It is recommended for student, practitioner, and specialist alike.—*R.D.*

* * *

Neuroanatomy. Second Edition. By Fred A. Mettler, M.D., Ph.D. Published by C. V. Mosby Company, St. Louis. 536 pages, 357 illustrations. Price \$10.

This volume is declared to have been "written to meet the needs of the medical student beginning instruction in neuroanatomy." That it can be used advantageously for that purpose is undoubtedly true. The material is organized into two sections covering



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BIBLIOGRAPHY: 1. Brown, E. A.: Ann. Allergy 6:393, 1948. 2. Wittich, F. W.: Ann. Allergy 6:497, 1948.

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first gross anatomy and then microscopic anatomy. There are excellent illustrations to demonstrate the gross structures.

The section on microscopic anatomy has numerous exceedingly helpful cross-section views of the neural axis from the cord through the ganglia and thalamus, which appear in both myeline and cellular stains to indicate the position of the tracts and nuclear groups. There are included a few diagrammatic representations which are used when these serve better than photographs to depict the anatomical or physiological information. Finally, there are brief physiological correlations presented at the conclusion of some of the anatomical data. But the student would require careful pedagogic assistance to attract the basic information he requires from the mass of detail incorporated in this volume.

The author is a prominent investigator of neuro-anatomical and neurophysiological problems, and it is questionable whether he could restrain himself from attempting an almost encyclopedic coverage of neuroanatomy. Some sections, such as those on the thalamus, hypothalamus, nuclei of the brain stem, and the association pathways of the cerebral hemisphere, have such detail that they may well act as the starting point for more specialized investigation of these areas. At the same time the basic information required of the medical student may be obscured by the numerous details as seen in the section devoted to the thalamus. Although some of the details are only briefly stated, there is an extensive and useful bibliography which could be of assistance if further investigation is required.

This is truly a second edition and not merely a second printing. Important new information, as for example that on the reticular formation, has been included and new illustrations have been added.

The chief merit of the volume lies in its excellent illustrations and its summary of a mass of details for one who is already moderately advanced in his neurological training.—*L.B.*

* * *

The Business Side of Medical Practice. By Theodore Wiprud. Published by W. B. Saunders Company, Philadelphia. 232 pages, 22 figures. Price \$3.50.

This book surveys the field of business as it relates itself to the practice of medicine. Chapters are brief and concise; the entire book may be read in a few spare hours. The author has covered a wide variety of subjects in an interesting fashion with chapters devoted to many aspects of ethical, legal, financial, and personal factors leading to a successful practice of medicine. Although the book is ideal reading for the medical student and young doctor starting in practice, its reading should prove most beneficial for

all doctors, irrespective of age, training, or type of practice.—*P.G.K.*

ABSTRACTS FROM CURRENT LITERATURE

Superficial Corneal Injuries

Treatment of Superficial Corneal Injuries. By A. Russell Sherman, *Am. Jnl. Ophthal.*, Nov. 1948.

Different types of superficial corneal injuries vary greatly in their rate of healing. A burn by a curling iron, on a cooking utensil, or a surgical abrasion usually heals within one to three days. Lime burns and abrasions by fingernails or twigs often require from one to two weeks.

This paper treats as "superficial" those injuries which involve chiefly the epithelium (even though the wound may be extensive), and in which the stroma of the cornea remains transparent.

Regeneration of the corneal epithelium is rapid if it is not hindered by lid movements and by repeated irrigations and instillations.

Visual acuity cannot be used as a standard for measurement of the extent of injury as other factors interfere such as blepharospasm, lacrymation and location of the injury in the pupil space.

Recommendations for treatment: initial anesthetic for purpose of careful examination; removal of all foreign particles; staining the eye with fluorescein and irrigation; instillation of a mydriatic, preferably atropine; application of a firm bandage to both eyes to stop all movements of the lids; rest in bed in a hospital where the patient can be adequately cared for with both eyes bandaged.

If the patient cannot or will not go to a hospital, the injured eye should be bandaged and the uninjured eye should have a light bandage which will help the patient keep the eye closed at all times when it is not necessary to open it in order to care for himself. It is important to give the patient two to four morphine tablets to relieve pain and secure a good night's rest. The morphine must be insisted upon; otherwise, many patients will "just stand the pain" but will become restless and want to open the eye to apply home remedies.

Twenty-one cases are cited to prove that the treatment recommended (chiefly rest with both eyes bandaged) tends to promote more rapid healing and less scarring than the open method of treatment.—*W.B.G.*

* * *

Treatment of Diabetes

A Liberal Regimen of Treatment of Diabetes. By Henry J. John, *Am. Jnl. Med.* V:4, 537-547.

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C. S. O'Brien, M.D., Professor and Head, Department of Ophthalmology, State University of Iowa.

John deJ. Pemberton, M.D., Professor of Surgery, Mayo Foundation.

Fred W. Stewart, M.D., Pathologist to Memorial Hospital Center, New York.

Fred D. Weidman, M.D., Professor of Research in Dermatology and Mycology, University of Pennsylvania.

Cyrus C. Sturgis, M.D., Professor of Medicine, University of Michigan.

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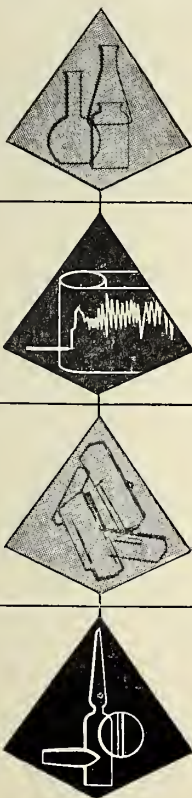


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The author summarizes the changes that have been made gradually through the years in the management of the diabetic patient. He presents an interesting discussion of the various personality changes and difficulties that arise when we try to regulate too closely the diet of this type of patient. He stresses the undesirability of insisting that the daily caloric allowance be divided into three equal meals for those who are not accustomed to eating a large breakfast. The blood sugar level itself will remain more stable in these patients if they are taking protamine zinc insulin, since the latter has minimal effect during the morning hours.

The author gives his experiences in 17 diabetic patients he managed as office patients because of the shortage of hospital beds. These patients were given only the following instructions: omit all sugar, pastry and soft drinks. Eat everything else you always have, but avoid stuffing. Do not eat more than two slices of bread with each meal, and if you have potatoes eat only one slice of bread. You may have plain ice cream once per week, but no soft drinks. The rest of the time use fresh fruit, fruit canned without sugar, or cheese and crackers for dessert.

For those who are interested in the treatment of diabetes this paper is well worth reading. The author is emphatic in that he does not believe in a "free diet and careless control" but in an "almost free diet with adequate control." He sees no need for complete reorganization of the life of a diabetic patient, as has been done in the past, creating needless psychological problems. The regulation of the insulin dosage and types of insulin to use are discussed.

By using this type of management the patient loses no time from work, does not have a large hospital bill to pay, and is not burdened with impractical details that upset his equanimity. Furthermore, this regimen relieves pressure on hospital beds which are needed more urgently for other types of cases.—C.C.U.

* * *

Sinusitis in Children

Sinusitis in Children. By Lawrence K. Gundrum. *Arch. Ped.*, 65:6, 293-301, June 1948.

At birth there is no frontal sinus. At four years it is the size of a pea. It is of little clinical significance before the eighth year.

The maxillary sinus is fairly well defined at birth. During the first year its body is occupied by the dental sac. It reaches its maximum size about the 15th year. It is important in all ages of childhood.

The ethmoidal sinuses are present at birth and are divided into the anterior, posterior, and post extreme ethmoid cells. These cells grow rapidly and

reach adult size between the 12th and 14th years. They are of some significance in middle childhood.

The sphenoid sinus does not present much of a problem in childhood and matures about the 12th to 15th years.

Sinusitis is probably the result of a relative disproportion between the body resistance and the virulence of the infective organisms. In children it is a cold that does not get well. Hansel brought out the fact that the allergic mucous membrane is one in a weakened condition and is prone to infection. Allergic sinusitis is probably a common entity in children. Dean stated that most sinusitis in children is caused by hypertrophied and infected tonsils and adenoids. Poor hygienic conditions predispose, also swimming and diving since much infected sinus discharge may float on the surface of a swimming pool. Children should be instructed to blow their noses gently with both nostrils open, or better yet to snuff back and spit.

Symptoms of sinusitis in children are essentially the same as those found in adults. Acute ethmoid sinusitis has a deep seated pain, referred to the brow behind the eyes and over the frontal area. It may be only an indefinite persistent headache. The swollen lower lid is characteristic. The discharge is similar to that of maxillary sinusitis. Transillumination may be of some value in maxillary sinusitis, but x-ray is valuable in any sinus pathology.

Differential diagnosis from allergy: allergy is suggested if there is stuffy nose, dull generalized headache with inability to concentrate, failure of nasal surgery to give permanent relief, sneezing, itching of the nose, eyes and throat, chronic cough, frequent colds, adenoid type of breathing, fatigue, chronic hoarseness, sore throat, improvement of symptoms in dry atmosphere, flareups from emotional strain, perennial symptoms worse in winter, asthma, hay fever, eczema, urticaria, indigestion after eating certain foods, family history of allergy. The mucous membranes of the nose are pale and edematous. Post nasal space is filled with thick mucus. Abundant eosinophiles are found in stained smears of the mucus. Many patients in whom eosinophiles were never found have been proven allergic by reactions to intradermal tests and relief following treatment for allergic sinusitis.

Treatment of acute sinusitis: bed rest with head elevated; small doses of atropine and calcium; sulfa if the patient can be kept in bed. Penicillin by injection and by aerosol powder has proved successful in a large number of patients. Nose drops may be used but serve mostly as irrigation fluids. Never use oily nose drops. It is best to shrink the nose thoroughly and use aerosol inhalations two or three times

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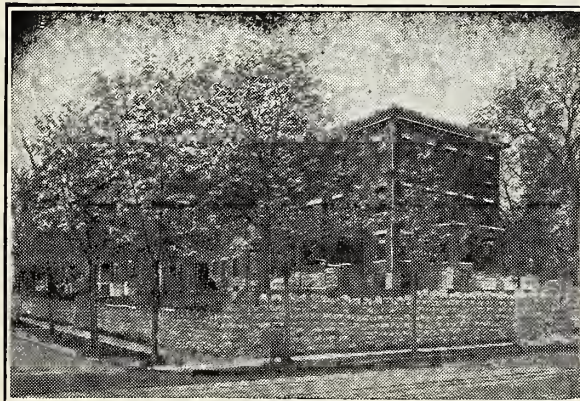
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in a half-hour interval. In many cases x-ray therapy must be used.

Treatment of chronic sinusitis: allergic sinusitis first must be ruled out. In pure maxillary sinusitis a few irrigations may cure the patient. These should be done under general anesthetic in young children but can be done with local anesthesia in older children. In older children the antrum can usually be irrigated through the natural opening; however, the authors prefer puncture in the inferior meatus in young children. Care must be taken not to injure a tooth bud. For ethmoiditis the Proetz displacement treatment is the one of choice. Vaccines are of some value and are preferably autogenous. Good general hygiene must be initiated. Endocrine disorders must be corrected.

Surgery may have to be done in more intractable cases. Nasal deformities must be corrected. Window operations will usually suffice in children.

Complications: conjunctivitis, orbital abscess, osteomyelitis, meningitis, bronchitis, bronchiectasis, arthritis, various ear diseases such as otitis media and deafness (both conductive and perceptive) are sometimes encountered.—D.R.D.

* * *

Rheumatic Fever

A Preliminary Report on Rheumatic Fever in Virginia. By Carolyn Moore McCue and Louise Fry Galvin, Jnl. Ped., 33:4, 467-483, Oct. 1948.

The purpose of this study was to investigate the detailed circumstances of 22 cases of rheumatic fever seen in Virginia.

The complete study included a careful history, physical examination with special attention to the heart, complete blood count, sickling preparation, urinalysis, stool examination, sedimentation rate, electrocardiogram, and x-ray or fluoroscopic examination. One major manifestation, such as polyarthritis, carditis, chorea, old history of rheumatic fever, or nodules, was present with several of the minor ones, such as fever, rash, leg aches, abdominal pain, epistaxis leucocytosis, elevated sedimentation rate and anaemia, before a positive diagnosis was made.

The duration of activity was determined by Taran's 10 points. He weighs leucocytosis, anemia, sedimentation rate, pulse rate, fever, vital capacity, weight gain, A-V conduction, auscultatory evidence, and finally clinical observation as to fatigability and emotional stability. Emotional instability continued in 25 per cent of the cases when all other laboratory studies were normal.

The average age at onset was about eight.

Ninety-eight of the cases had sore throat preceding the initial attack, nine had scarlet fever, five had tonsillectomy, six had pneumonia.

In reviewing a large group of cases studied by various groups it is suggested that first attacks of rheumatic manifestations occur from 34 to 50 per cent less often in tonsillectomized groups than in nontonsillectomized groups.

The symptoms of the initial attack of rheumatic fever were joint involvement in 157, malaise 146, fever 146, fatigue 118, sore throat 111, aching extremities 107, anorexia 89, pallor 88, abdominal pain 88, irritability 63, epistaxis 60, weight loss 56, chorea 34, rash in nine and nodules in five. The symptoms of the second attack did not differ materially from the first attack, except that malaise and fatigue were more prominent.

The laboratory findings showed but one in 10 with a normal sedimentation rate. The leucocyte count was not dependable, but it was usually more elevated in acute carditis. Only about 18 per cent of the cases showed an anemia.

The duration of the attacks averaged about six months, and in 26 per cent of the cases the disease was active over one year. The second attacks averaged eight months with about 1/3 of the cases lasting longer than one year.

The term "cardiac involvement" is used to refer to murmurs which were considered significant, abnormal sounds, enlargement or unusual contour of the heart, or electrocardiogram changes. One or more of these abnormal factors was found in 188 or 83 per cent of the authors' cases during the first or later

ANNOUNCEMENTS

- May 26-28—Meeting, American Goiter Association, Madison, Wisconsin.
- May 30-June 3—International Congress on Rheumatic Diseases, Waldorf Astoria Hotel, New York City. Director, Mr. Robert D. Potter, 535 Fifth Avenue, New York City.
- June 1-3—First Scientific Session, American Academy of Neurology, French Lick Springs, Indiana. Address Dr. Joe R. Brown, 19 Millard Hall, University of Minnesota, Minneapolis 14, Minnesota.
- June 2-5—15th Annual Meeting, American College of Chest Physicians, Ambassador Hotel, Atlantic City, New Jersey. Murray Kornfeld, Secretary, 500 North Dearborn, Chicago 10, Illinois.
- June 6-10—Annual Meeting, American Medical Association, Atlantic City, New Jersey.
- June 10—First Meeting, International Academy of Proctology, Marlborough-Blenheim, Atlantic City, New Jersey. Address Dr. Alfred J. Canton, 43-55 K'ssena Boulevard, Flushing, New York.
- June 13-25—Intensive Personal Course in Diagnosis and Treatment of Congenital Malformations of the Heart, Cook County Graduate School of Medicine. Benjamin M. Gasul, Instructor. Address Registrar, 427 South Honore Street, Chicago 12, Illinois.
- July 18-30—Postgraduate Course in Chronic Chest Diseases Given by American Trudeau Society and University of Colorado School of Medicine, Denver, Colorado. Address American Trudeau Society, 1790 Broadway, New York City.
- August 1-13—Intensive Personal Course in Cerebral Palsy, Cook County Graduate School of Medicine. M. A. Perlstein, M.D., Instructor. Address Registrar, 427 South Honore Street, Chicago 12, Illinois.
- September 6-10—27th Annual Session, American Congress of Physical Medicine, Netherland Plaza Hotel, Cincinnati, Ohio. Address American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.
- October 27-29—Course in Gastrointestinal Surgery, Boston City Hospital, Boston, Massachusetts. Address National Gastroenterological Association, Department GSJ, 1819 Broadway, New York City.

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attacks. During the initial attack systolic murmur appeared in 107 cases, diastolic murmur in 21, abnormal sounds in 44, thrill in three, enlarged heart in 40, abnormal ECG in 46, abnormal cardiac contour in 33, cardiac failure in five, friction rub in seven.

In the series there were 16 deaths or 7.1 per cent. The average duration of life after onset of rheumatic fever in this group of 16 deaths was 40.8 months.—*D.R.D.*

Instead of crying: "Can we afford some new service?" we are now tending to realize that we cannot afford ill-health and the resulting loss of productive work. We are beginning to realize that expenditure on preventive services and on health research pays an enormous dividend.—*Sir Andrew Davidson, Brit. M.J., Feb. 7, 1948.*

CLASSIFIED ADVERTISEMENTS

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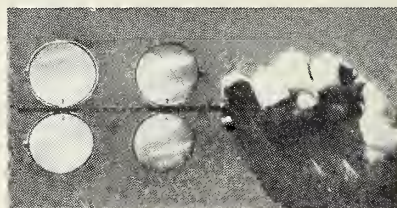
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Society of Anesthesiology Meets

The Kansas Society of Anesthesiology met at the Broadview Hotel, Emporia, March 1, with Dr. H. F. Spencer of Emporia as host. During the afternoon the following program was presented: "Intravenous Procaine for the Relief of Pain," Dr. Wray Enders, Kansas City; "Responsibilities of the Future Anesthesiologist," Dr. John W. Pender, Rochester, Minnesota; "Practical Experience with Ether for Anesthesia," Dr. L. Lafe Bresette, Kansas City. In the evening the group held a dinner meeting with members of the Lyon County Medical Society.

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Eczema of the Hands*

Paul A. O'Leary, M.D.**

Rochester, Minnesota

Dermatitis of the hands has both social and economic features that may be far-reaching. Not only is eczema uncomfortable, unsightly and annoying, but it may incapacitate the individual to the point of causing financial difficulties. The pruritus may add materially to an already upset nervous system, so that a vicious cycle of pruritus, sleeplessness and "nervousness" is set up which aggravates the dermatitis to the point of making it more persistent and likewise resistant to treatment. The disease may be self-limited, as in occupational eczema of the hands, where the skin becomes "hardened" and the dermatitis disappears, or it may be a permanent state in which remissions and exacerbations follow each other in a continuous pattern. A familial history of eczema or a history of infantile eczema (atopy) is significant in patients with dermatitis of the hands because it indicates an allergic state or, if I may be permitted to use an obsolete term, an "eczematoid diathesis." Although the word "diathesis" has become almost extinct, it still conveys the idea that certain patients who have eczema are "born to it," or, in other words, are prone to display on their skins a reaction that we call "eczema." Although due to different causes, the same morphologic features characterize most of the eczemas of the hands.

Description

Eczema or dermatitis of the hands consists of a vesicular or scaling, oozing or weeping, crusted or infected eruption of the hands. When in the acute phase it is characterized primarily by vesicles and erythema; when subacute, by scaling and erythema; and in the chronic phase, by thickening or lichenification and scaling. Pruritus may be common to each phase, and secondary infection may alter the clinical picture.

The description of one form of eczema due to a known factor might well be the same as that of the type of eczema in which the cause is unknown. In other words, it is usually impossible to recognize the cause from the morphologic features alone, and for this reason patients are disappointed when a dermatologist is unable to determine the etiology of their difficulty by merely looking at the hands. Accordingly, my discussion will be limited in the main to the types of conditions of which the cause can be demonstrated, and by some generalizations in regard to their treatment.

The following types of eczema of the hands will be discussed:

1. Fungus infections and "id" reactions;
2. Irritants, contacts, occupational types;
3. Infectious eczema, foci;
4. Food factors;
5. Neurodermatitis, atopic, dyshidrosis (pompholyx);
6. Drug eruptions, iodides especially;
7. Visceral disease; and
8. Those of unknown etiology.

To the dermatologic tyro, most of the patients who have a dermatitis of the hands have a "*fungus disease*," while to the experienced dermatologist, fungus diseases of the hand are comparatively rare. Fungus infections of the feet are common; in some of these patients a vesicular eruption of the hands develops which is known as an "id" reaction. The term "dermatophytids" is applied to this condition, which is thought to be the result of hematogenous distribution of the fungi or some by-product which sensitizes the skin of the hands. "Id" reactions may also produce an eruption on the arms or trunk. The "id" reaction is important because not infrequently the cutaneous sensitization that follows results in the development of an eczema that may require years to overcome. In other words, fungus infections of the

*Read at the meeting of the Kansas Medical Society, Topeka, Kansas, May 9-12, 1949.

**Section on Dermatology and Syphilology, Mayo Clinic.

feet have more significance than merely blisters on the feet, because they may produce a vesicular eruption on the hands which at first may be an "id" reaction, a comparatively temporary affair, or it may result in the development of a persistent form of eczema.

Fungus infections of the hands are difficult to recognize clinically, but easy to prove with the aid of the microscope. It takes but a short time to clip off one of the vesicles, invert it on a glass slide, put a few drops of a 10 per cent solution of sodium hydroxide or potassium hydroxide thereon, allow it to soak for five minutes and examine it under the microscope. The mycelia and spores are readily found in patients with an acute phase of fungus infections, while in those who have the chronic form culture may be necessary to establish their presence.

In the patient who has an "id" reaction no fungi are found in the hands, although they are present in scrapings from the feet. "Id" reactions on the hands usually are associated with a flare-up of the fungus infection of the feet, and often a result of over-treatment of the foot disease. I repeat for emphasis that fungus infections of the hands are rare, and that "id" reactions have been offered too frequently as the cause of an eruption of the hands.

Dermatitis due to irritants or contacts, as in an occupational or avocational disease, is seen frequently. The etiologic substance may work in one of two ways: first, by acting as an irritant it may produce a dermatitis; second, by acting as a sensitizer it may upset the skin equilibrium so that some other agents, chemical or otherwise, produce the eczema. In these latter cases the condition is difficult to recognize because the real etiologic agent may be overlooked in favor of the sensitizing substance. In industries, a dermatitis sometimes develops in workers shortly after they start on a new job and if they are able to, or from necessity have to, continue at the work, they may eventually overcome the dermatitis. The workers call this "skin hardening," but unfortunately it does not develop in all those in whom such a dermatitis appears, and some must give up the work because they are atopic and do not overcome their sensitivity.

It is impossible to enumerate skin irritants in a discussion of this type, because there are so many known factors that cause eczema of the hands. A few of the most commonly seen occupational dermatoses are those of housewives, dentists, physicians, chemists, lime handlers, workers whose hands are kept wet, and those who work with dyes, caustics and insecticides.

The patch test may help in determining the cause in cases of this type. The test may be done by applying to the skin of the inner side of the arm a small piece of gauze soaked in a weak solution of

the suspected substance; the gauze, which is covered with adhesive or plastic tape, is removed in twenty-four hours. A positive outcome of a test is one in which a reaction, varying from erythema to vesiculation, appears. In some individuals the reaction may be delayed and may require forty-eight or sixty hours to develop. Caution should be used in employing a patch test during an acute flare-up of the dermatitis, because of the danger of producing a severe exacerbation. A patch test is not always specific and care must be used in interpreting it. A patient may give a positive patch reaction to formaldehyde, while the dermatitis may be due to mercury; the formaldehyde reaction in this instance may be the result of the state of sensitization the skin has developed. In my experience, intradermal or scratch tests have not been of much help in patients with eczema. The process of trial and error—that is, avoiding the suspected substance for a given period and then exposing the patient to it again—is sometimes a practical method of determining its significance, although it must be borne in mind that this method may be misleading because the patient may be sensitive to more than one substance.

Staphylococci and/or streptococci may play a prominent role in maintaining dermatitis of the hands originally the result of some other factor. An example is an "id" reaction or a disturbance in the sweat mechanism which results in a vesicular eruption with an associated hypersensitization which creates a change in the skin on which the pyogenic organisms find a ready soil.

The so-called recalcitrant pustular eruptions of the hands and feet have been a controversial subject among dermatologists for several years, and the debate hinges on the etiologic significance of the presence of the staphylococcus and streptococcus; as to whether they are pathogenic or secondary invaders. It is difficult to attribute the cause of a dermatitis to micro-organisms cultured from a denuded, crusted and weeping eczema present for many years. The finding of foci of infection in teeth, tonsils and other structures recently has been offered again as an etiologic factor in this type of dermatitis. The term "bacterids" was suggested by Andrews¹ for this group, and has become popular.

That ingested foods play a part in the production of eczema of the hand is a popular concept among patients, and no doubt the idea has some merit as the result of experience and observations by those afflicted. Perhaps these patients control their eczema by elimination diets and do not come to the dermatologist's attention, because it has been my experience that a restricted diet while the patient is in the hospital has been of slight value in controlling dermatitis of the hands. Also, improvement following a dietetic regime must be given other considera-

tions, such as the many other factors that cause dermatitis; the fact that skin sensitizations often run a limited course; that "id" reactions and drug eruptions likewise are self-limited and that their spontaneous disappearance may be misinterpreted as the result of dietary efforts. The patient who attributes his eczema to a food and notices that not only his skin but also his gastro-intestinal tract is upset following the ingestion of the specific foodstuff is apt to be correct in his observations. Drinking large quantities of citrus fruits or eating strawberries or raspberries to excess frequently is mentioned by patients as a cause of their vesicular eruptions. It is difficult to prove this relationship scientifically, although it is so frequently reported by patients that there must be some merit to the reports.

The term "pompholyx" or "dyshidrosis" has been given to the eruptions of the hands thought to be of a neurogenic origin. The concept that nervousness, fatigue or emotional stress could produce such a vesicular eruption did not find ready acceptance by those who felt that most of the dermatitides of the hands were the result of sensitization phenomena. I have felt for many years that certain of these vesicular eruptions were in reality "tears of the skin." The disturbances in the sweat mechanism which lead to the development of deep-seated vesicles, usually on the palmar side of the hands and fingers, which appear overnight, run a course of three to six weeks and heal spontaneously, are rather common occurrences, in my experience. It is difficult to make a diagnosis of pompholyx at the time of the patient's first visit; however, when the history reveals many repeated attacks occurring once or twice a year, and repeated failures to prevent the recurrences by diet, elimination of contacts and ruling out of "id" reactions, the possibility that a neurogenic factor is in the etiologic background should come to mind. When the relationship of fatigue and the eruption is called to their attention, some patients interpret the reaction in terms of "speedometer" or "altimeter." When they have been going too fast or have been keyed up too high, the resultant vesicular lesion indicates to them that they are in need of rest, relaxation or less responsibility. The fortunate patient is the one who anticipates his fatigued state and seeks a change before the eruption appears. The influence of emotional states on our sweating mechanism is well known, and the effect of chronic nervous states producing dyshidrosis, retention of sweat to the point of creating small blisters, while acute emotional reactions produce excessive perspiration, is not difficult to understand. The diagnosis of pompholyx or dyshidrosis should be made after other etiologic possibilities have been eliminated.

Another type of lesion frequently found in the hand is the lichen chronicus simplex or neuroder-

mite of the palm. It is characterized by thickening, scaling, fissuring, increase in pigmentation and itching. It is frequently seen in women after the menopause, and was for some time thought to be evidence of a hormone deficiency. This concept now has been discarded in favor of a neurogenic or urticarial origin. The spasms of pruritus suggest the latter concept; namely, a localized urticarial reaction which causes itching, in which much scratching results in thickening or lichenification, and which leads to fissures that, when superficially infected, are painful.

Drugs also produce vesicular eruptions of the hands. Bromides and iodides may produce a small vesicular eruption, while the barbiturates and phenolphthalein may produce small blebs. Penicillin also produces an eruption which has the clinical characteristics of an "id" reaction.

The seventh group of eczemas of the hand are those associated with visceral disease of varying types. Autoeczematization of the trunk, arms and hands which frequently follows a stasis dermatitis of the lower legs, with or without ulceration, may leave a residual eczema of the hands that is persistent. Visceral disease, especially malignant processes of the bowel, prostatic obstructions and hypertensive disease, may have associated with them eczema of the hands.

The allergists search for allergens, which are the result of disturbances in the immunologic mechanism as the result of contacts, inhalants or ingested eczematogenic substances. This theoretic concept, although having a degree of popular favor, does not explain all our unsolved problems of eczema of the hands, and unfortunately they are numerous. In many of these patients the causative agent is not found, perhaps because of several factors or of some cause as yet unknown. In the atopic who starts with infantile eczema the problem of eczema of the hand is difficult to explain and is resistant to treatment.

Treatment

While the cause of the eczema is being sought, treatment to relieve the discomfort is in order. It is important to bear in mind several pertinent facts before prescribing for these patients.

First, the presence of an acute vesicular eruption indicates that the skin, not only of the hand, but also of areas not involved, is hypersensitized and accordingly is prone to react unfavorably to any therapeutic agent that is not mild and soothing.

Second, applications containing grease do not absorb the serum exuding from the ruptured vesicles and therefore are usually uncomfortable.

Third, applications should be of a type that are not messy, do not stain and are easily removed. When an extensive vesicular eruption involves the

greater part of both hands, the patient's occupation becomes of secondary importance for the time being, so that wet dressings kept on continuously with the patient in bed often will save considerable time away from his work in the long run. The use of 0.5 per cent solution of aluminum subacetate, or boric acid in 1 or 2 per cent solution, applied in a large "boxing glove," fluffy dressing, usually is soothing. The gauze adjacent to the skin, rather than the bandage covering the gauze, must be kept wet. This may necessitate removing the dressing frequently and dunking it in a bowl containing the solution. When evidence of secondary infection is present, bacitracin in strengths of 500 to 1,000 units per cubic centimeter has been an outstanding wet dressing, in our experience. We have not as yet encountered any evidence of sensitization to it. Potassium permanganate, in strengths of 1:15,000 or 1:20,000, or silver nitrate in 1:2,000 solution, although staining, may be helpful. In addition, one of the antihistaminic agents such as pyribenzamine or thenylene, may be used during the pruritic phase.

During the subacute phase a soothing lotion or a mild ointment may be employed. Calamine lotion, allowed to dry, on top of which a 5 per cent boric acid ointment is applied, usually is well tolerated. Naftex, 10 per cent in zinc oxide, and ichthyol, 3 per cent in zinc oxide, are both mild applications.

In the chronic states, use stimulating ointments such as 1 per cent crude coal tar, salicylic acid in 1 or 2 per cent to start, increasing gradually, according to tolerance or the amount of skin thickening, up to strengths of 10 per cent. In those with severe itching, theophorin ointment has been the most satisfactory of the antihistaminic ointments. Patients dislike applications that prevent them from working or limit their social activities, but we cannot always meet these requirements, and compromising

to meet these demands usually results in unsatisfactory results.

An eczematous hand is a sensitized hand—it reacts unfavorably to many applications shortly after the onset, and while it is in the process of reaching the peak of the eruption is not apt to respond favorably to any application. In such cases it may be necessary to employ several of the preparations mentioned, bearing in mind that it is better to use the applications in weaker rather than in stronger dilutions. Overtreatment reaction, as the result of using remedies too strong and hence irritating, is a common dermatologic problem, and time rather than medication may be the important factor in finally finding a remedy that is soothing.

The use of cleansing agents and soap substitutes, in place of soap and water, is advisable for most patients with eczema of the hands. Also, the use of protective creams in those found sensitive is of some merit, although frequently disappointing.

The problem presented by eczema of the hand often is formidable. When the irritant can be demonstrated and contact with it henceforth can be avoided, the problem is simple, but unfortunately in most cases the condition is more involved. I have often said that unraveling the cause of eczema is a detective problem requiring a detailed history, trial of elimination with suspected contactants, patch testing in an effort to distinguish the significance of several suspected irritants, culturing and/or microscopic examination for fungi or bacteria, eliminating systemic disease, food suspects and recent medications and understanding the personality involved. Even when these things are adequately done, some patients continue to have eczema.

Reference

1. Andrews, G. C.: *Diseases of the Skin For Practitioners and Students*. Ed. 3, Philadelphia, W. B. Saunders Company, 1946, p. 259.

Office Diagnosis and Treatment of Diabetes Mellitus

Glen R. Shepherd, M.D.

Kansas City, Kansas

The purpose of this paper is to emphasize the need for an increased informed interest in diabetes among general practitioners and internists, and to discuss the practical points in the diagnosis and treatment of diabetes mellitus. No discussion of intermediary carbohydrate metabolism, the biochemical pathogenesis particularly as it relates to the pituitary and adrenal cortex,⁹ nor of coma is included.

The incidence of diabetes is such that it is now and will continue to be even more impossible for the treatment to be carried out only by that small group of internal medicine specialists who are called "diabetic specialists." On the basis of various surveys, there are now in this country about 2,000,000 active cases of diabetes mellitus, of which about one million are undetected and not yet under treatment.^{3, 3a, 4, 4a} There are 55,000 new cases being discovered each year, in the course of insurance examinations and routine checkups. In the present population of this country, it is estimated that four to six million people will develop diabetes.³

In the overall population, there is an incidence of from 1:70 to 1:200.^{1, 2} These figures, which support the previous ones cited, deal only with active diabetes and exclude the potential cases now exhibiting doubtful glucose tolerance curves.

It is obvious, therefore, that the specialists cannot assume the entire responsibility for diabetes treatment. Cases are first seen by doctors in every branch of medicine from obstetrics to geriatrics. Most cases are first seen by the general practitioner, since these doctors constitute the largest group of practitioners. Were each new case of diabetes referred to a "diabetic specialist," of which there are relatively few, it would be impossible for all diabetics or even a majority to receive adequate treatment. And in adequate early treatment lies the greatest opportunity to ameliorate the disease and possibly delay complications.^{7, 8, 10, 15, 22}

But before treatment can be started, diabetes must be first suspected and then diagnosed. Diabetes should be considered in any patient who is overweight, with a history of diabetes in the blood relatives, with a history of glycosuria at any time, with gallbladder disease, with vulvar irritation (especially pruritus vulvae), in any patient with a cutaneous infection, chronic ulceration, gangrene, delayed wound healing, retinopathy, cataract, or neuritis.⁵ These findings, in addition to the classical symptoms of polyuria, polyphagia, polydipsia, fa-

tigue, and loss of pep should immediately demand an investigation into the possibility that diabetes mellitus is present.

Dr. Elliot P. Joslin said it first, and Dr. Sheridan re-emphasized the same thought in a recent article¹⁴: that delayed diagnosis is enemy number one of diabetics. If diagnosis is delayed until the patient presents coma, the diagnosis must be further delayed for necessary laboratory work, because diagnosis of the unconscious patient is not easy. These delays may cost the life of a diabetic patient, and may increase the severity of the diabetes if the patient survives them.

Therefore, your first opportunity presents itself when any of the foregoing symptoms occur. The next step in diagnosis after such a history is an examination of the urine for sugar, acetone, and diacetic acid as well as the non-fasting blood sugar.

If only one urine specimen can be examined, it should be the one voided 1½ to two hours after eating a meal, since at this time the blood sugar is at its height in the diabetic and is most likely to be excreted in the urine.¹ A finding of melituria in any degree should be followed by blood sugar examinations within the following day or two. There are cases of melituria which are not due to glucose but to other sugars. This possibility can be eliminated easily by doing the fermentation test on the urine, since only glucose is fermented by yeast.

In regard to blood sugar tests, the glucose tolerance test is not used routinely for diagnosis, but it is valuable in deciding doubtful cases. For routine blood sugar testing, a single specimen drawn one to 1½ hours after eating a chiefly carbohydrate meal or after taking 100 grams of dextrose orally will give the most useful information.¹ This is so because in normal persons, the blood sugar has returned to nearly normal levels at this time after food ingestion, while in diabetics it is still elevated. To clarify this, let us consider the blood sugar levels in normal people and again in diabetic persons.

In the normal, the fasting blood sugar is below 130 mgm. per cent, and usually in the range from 70 to 120 mgm. per cent. The greatest rise after glucose ingestion will be at one-half to one hour, and this figure will not be greater than 170 mgm. per cent except in the case of elderly people, in whom higher half-hour to one-hour readings are not necessarily indicative of diabetes. At the two-hour post-cibal period, the blood sugar will have returned to or nearly to the fasting level.^{1, 2, 5, 7, 10}

In the diabetic, the fasting blood sugar is usually but not necessarily more than 130 mgm. per cent, which was the diagnostic level when only fasting specimens were used. However, a rise above 170 mgm. per cent occurs after dextrose feeding, and at two hours the blood sugar level is still elevated to or higher than the peak it reached at one-half hour. The three hour post-prandial reading may continue elevated or may fall, but will not usually reach the fasting level. The essential point is that the blood sugar in a diabetic rises higher and remains elevated longer after eating than in a nondiabetic person.
1, 2, 5, 7, 10

Thus, if the single blood sugar one to 1½ hours post-cibal is 170 mgm. per cent or higher, it is unquestionably abnormal and indicative of diabetes except in the aged (where you can't accomplish as much by treatment anyway). One hundred and sixty to 170 mgm. per cent is a doubtful level and suggests the desirability of doing a glucose tolerance test.

It is increasingly clear that the diagnosis of diabetes mellitus will be missed in many if only fasting urine and blood samples are tested, for individuals can have normal fasting urine and blood sugars and still be diabetic.^{6, 31}

Because of the life-long regimen which the diabetic follows, it is important that no mistake occur by making the diagnosis of diabetes when the condition is not diabetes. Such other conditions might be termed diagnostic pitfalls. It is also important that the diagnosis of diabetes be attached to all who have the disease, even though they have no urine sugar, as may occur in older diabetics.

B. Y. Glassberg¹¹ demonstrated as long ago as 1931 that sugar is not necessarily found in the urine at a constant blood sugar level of say 160 mgm. per cent in all persons, but rather that sugar may appear in the urine at blood sugar levels of from 100 mgm. per cent to above 250 mgm. per cent. Thus, aglycosuric hyperglycemia does occur and might cause us to overlook diabetes if we rely upon urinalyses alone for diagnosis.

Other diagnostic pitfalls than aglycosuric hyperglycemia are the non-diabetic meliturias, which can easily be ruled out by the yeast fermentation test of a urine containing reducing substances. Idiopathic renal glycosuria or constant urinary sugar with normal blood sugar levels is said to occur, although it is uncommon. Another diagnostic pitfall is the use of the glucose tolerance test in a patient who has been fasting for several days or has been eating some bizarre diet with a lot of fat and little carbohydrate and protein consumed, for these can produce diabetic curves and blood sugar levels in normal persons.

Having made the diagnosis of diabetes mellitus, those patients acceptable for office management from the beginning fall into three groups. The first and largest group are the adult overweights in whom the diagnosis of diabetes is made during preliminary survey of the patient. These obese diabetics frequently do not have the usual quadrad of diabetic symptoms. Obesity is frequently associated with diabetes in people past middle age, and in them the diabetes is usually mild and controllable by diet alone, as with a reducing diet which would be used anyway, or with a combination of diet and small doses of insulin (under 30 units). They may have such an improved food tolerance after weight loss that they need no insulin with maintenance of optimum weight by diet. The second group of diabetics manageable in the office are the mild symptomatic diabetics—the mild ones being identified as those diabetics exhibiting easy control with diet and insulin, and having a longer period of safety between indiscretion and ketosis. The third group that can be adequately handled with office visits are selected cases with moderately severe diabetes, the selection being based upon a higher than usual level of intelligence and cooperation.

There are certain diabetic patients who require temporary hospitalization while their metabolism is being brought under control. Most child diabetics, because they are severe cases intolerant to much error in insulin dosage and with a great potentiality for improvement if a strict early regimen is followed, fall into the group requiring hospitalization initially. Any severe infection in a severe diabetic requires hospital care, because of the everpresent possibility that ketosis and coma will develop, and because an infection increases the insulin requirement to an unpredictable degree. The diabetics which most urgently need hospitalization are those in diabetic coma, where hesitating inadequate therapy may cause death. Coma requires the full resources of the hospital and these should be available for immediate use.

In order to treat the patient intelligently and adequately, we must bear in mind the goals of diabetic treatment. The first goal, unquestionably, is the avoidance of ketosis and coma. Coma is entirely preventable and completely curable if seen early.
7, 8, 10

The second goal, not entirely pertinent to this paper, is a normal growth rate in child diabetics. If childhood diabetes is well controlled by insulin and diet, the child will reach his full potential height and weight. If only fair control is achieved over the years of growth, two-thirds of the children will have a normal growth rate but one-third will suffer some degree of dwarfism.¹⁵ At age seventeen, uncon-

trolled diabetics who are short will, if well controlled, show a late increase in height bringing them almost up to normal.³² But short stature and sexual underdevelopment cannot be eliminated by good to excellent control after the precious years of growth are past.

The third goal, in general, is the delay or prevention of complications. Specifically, by maintaining good diabetic control, *early* arteriosclerosis, retinal damage, cataract, and neuropathies may be prevented or their appearance delayed for years beyond the time they would occur in an uncontrolled or poorly controlled diabetic.^{7, 10, 16, 22, 30} There is an unconfirmed hypothesis in the literature that arteriosclerosis is a part of the late diabetic syndrome rather than a complication. Until this is proved beyond reasonable doubt, the patient deserves our holding the conservative view that good diabetic control will delay the onset of arteriosclerosis in the diabetic. Arteriosclerosis may occur in the peripheral vessels as an obliterating phenomenon. It may appear in the coronary vessels, with well known results, or it may affect the renal vessels with nephritis ensuing.^{10, 16, 18, 22}

The fourth goal, and one heartily seconded by the patient, is the allowance of as normal a life as is compatible with the first three goals. Although dietary discretion must be exercised and one or more injections of insulin may be needed each day, with adequate understanding by the patient, a reasonably normal life pattern can follow. The patient will always cooperate much more eagerly if it is evident that you are working toward this goal of a nearly normal life. If meticulous weighing of the diet, frequent blood sugars, and multiple insulin injections through each day form the chief center of the patient's life with increasing self-absorption, you will have caused the diabetic to leap from the organic frying pan into the psychological fire. In the case of children, serious behavior problems result from over-strict over-emphatic regimentation.^{27, 28} Various psychopathies are the result in the adult of such regimentation over-emphasis. Education of the patient in the nature of the disease forms an important adjunct to treatment, helping to enlist voluntary cooperation and avoiding psychopathic introversion.

The general methods for achieving these treatment goals are the maintenance of physiological blood sugar levels, avoidance of *significant* glycosuria, and maintenance of optimum weight. These are accomplished by diet, insulin, weight reduction of the obese, and exercise.

You are treating a person with a metabolic disease and not just isolated diabetes mellitus. Therefore, in any treatment outline, reassurance and explanation of the disease ranks first in importance for long-term

success. The new diabetic is often panic-stricken. Consequently reassurance is first in order, but explanation of diabetes and your methods and goals of treatment rank a close second. A printed instruction sheet helps with the explanation, for the patients to read when they reach home and a state of lesser emotion.

The patient is then questioned about food habits, when the large meal of the day is eaten, and the custom of an afternoon or bedtime snack. This information allows the physician to pattern the diet suitably for each patient. Such individualization is highly necessary if patient cooperation is to result. The diet is written out in the blank spaces to the right of the form shown. No weighed rigid regimen is now advocated for those diabetics treatable in the office. An estimated diet, using such household measures as spoonfuls, glasses, and ordinary servings is good enough. You can't completely change an adult's food habits and expect continuing observance of the diet. Incidentally, it may be better to avoid use of the word diet around the patient, and talk instead of food lists, since many people have built up resistance and antipathy to any "diet." The positive instead of the negative approach must be used in dealing with diet. By emphasizing prohibitions (negative approach), the patient is made doubtful, then reluctant, and often uncooperative. Present diabetic diets are not abnormal for carbohydrate and protein amounts, although some fat restriction in the lower calorie diets may be noticed. The fat content of the diet should be, in grams, one-half or less the weight of carbohydrate allowance, and the carbohydrate should be 150 grams or more daily. Adequate protein intake daily is essential, although just how much is adequate is a moot point.

The diet form illustrated in this paper provides the quickest and easiest way this author has yet found of fulfilling the above dietary requirements and individualization without needing to calculate each diet for each patient at the time. All food groups customarily eaten at the three meals are listed, followed by four columns of amounts, and at the right side, a blank space for the amount for a specific patient to be filled in. In use, the estimated caloric need of the patient forms the basis for picking the column. The average city patient does well on 1800 calories daily. The 1200 calorie list is used for reducing and can be quickly converted to 1000 calories by subtracting a glass of milk. The person who does heavier work, such as on a farm, may require 2200 calories or more daily to hold his weight. Choosing the column headed by the caloric amount desired, the household measures given therein opposite each food are copied on the blank spaces at the right of the form. If the noon meal is the larger,

FOOD LIST

Calories per day (approximately).....	1200	1800	2200	2600
Carbohydrates, Gms.	117	186	230	258
Protein, Gms.	73	84	108	117
Fat, Gms.	53	80	104	128

BREAKFAST

Grapefruit Juice.....	1/2 glass	1 glass	1 1/2 glasses	1 1/2 glasses	.....	.....
Oatmeal.....	none	1/4 cup	1/2 cup	1/2 cup	.....	.....
Toast.....	1 slice	1 slice	2 slices	2 slices	.....	.....
Egg.....	none	one	one	one	.....	.....
Bacon.....	none	4 strips	4 strips	4 strips	.....	.....
Cream.....	1/2 oz.	1 oz.	1 oz.	1 oz.	.....	.....
Butter.....	none	1/2 pat	1 pat	1 pat	.....	.....
Coffee, tea.....	.....	1 pat	.....	.....	.....	.....

LUNCH

Lean Meat.....	50 Gm.	50 Gm.	100 Gm.	100 Gm.	.....	.....
or					or	.....
Egg.....	one	one	two	two	.....	.....
or					or	.....
Cottage Cheese.....	1/2 cup	1/2 cup	1 cup	1 cup	.....	.....
Bread.....	1 slice	1 slice	2 slices	2 slices	.....	.....
Butter.....	none	2 slices	1 pat	1 pat	.....	.....
Milk, whole.....	1/2 glass	1/2 pat	1 pat	1 pat	.....	.....
3% Vegetable.....	4 T.	1 pat	1 pat	1 pat	.....	.....
18% Vegetable.....	1 T.	1 glass	none	none	.....	.....
9% Fruit.....	100 Gm.	4 T.	4 T.	4 T.	.....	.....
		3 T.	2 T.	2 T.	.....	.....
		2 T.	2 T.	2 T.	.....	.....
		150 Gm.	100 Gm.	100 Gm.	.....	.....

MID-AFTERNOON OR BEDTIME

Milk, whole.....	1/2 glass	1 glass	1 glass	1 glass	.....	.....
or					or	.....
Coca-Cola.....	1 bottle	2 bottles	2 bottles	2 bottles	.....	.....
Soda Crackers.....	two	two	three	three	.....	.....
Chocolate Milk.....	none	none	none	1 glass	.....	.....

DINNER

Lean Meat.....	200 Gm.	100 Gm.	200 Gm.	200 Gm.	.....	.....
or		200 Gm.			or	.....
Egg.....	none	two	none	none	.....	.....
or		none			or	.....
Cottage Cheese.....	none	1 cup	none	none	.....	.....
Bread.....	1 slice	none	none	none	.....	.....
Butter.....	none	2 slices	2 slices	2 slices	.....	.....
Milk.....	1/2 glass	1 slice	2 slices	2 slices	.....	.....
3% Vegetable.....	4 T.	1/2 pat	2 pats	2 pats	.....	.....
18% Vegetable.....	1 T.	1 pat	2 pats	2 pats	.....	.....
9% Fruit.....	100 Gm.	1 glass	none	none	.....	.....
Coffee, Tea.....	.....	none	none	none	.....	.....
		4 T.	4 T.	4 T.	.....	.....
		3 T.	3 T.	3 T.	.....	.....
		3 T.	3 T.	3 T.	.....	.....
		100 Gm.	100 Gm.	100 Gm.	.....	.....
		150 Gm.	100 Gm.	100 Gm.	.....	.....

VEGETABLES AND FRUITS

3%		
Asparagus, fresh and canned	Lettuce	Spinach, fresh and canned
Beans, green and wax	Mustard Greens	Squash, Summer
Beet Greens	Okra, canned	Strawberries, w.p. (2 cups)
Broccoli	Radishes	Tomatoes, fresh and canned
Cabbage	Rhubarb, fresh and w.p.	Tomato Juice, fresh and canned
Cauliflower	Romaine	Turnip Greens, fresh and canned
Cucumbers	Sauerkraut, fresh, canned	
6%		
Beans, scarlet runner	Dandelion Greens	Muskmelon, Cantaloups,
Beans, snap	Eggplant	Honey-dew Melon (1/4 small)
Beets, canned	Gooseberries, w.p. (1 1/3 cups)	Peaches, w.p. (1 large)
Blackberries, w.p. (3/4 cup)	Kohlrabi	Plums, w.p. (4 small)
Blackberry juice (3/4 glass)	Okra, fresh	Squash, cushaw, winter
Chives	Peppers, green, red	Strawberries, fresh (1 cup)
Collards	Pumpkin, fresh, canned	Turnips
9%		
Apple Sauce, w.p.	Cherries, red and white, w.p.	Watermelon (1 thin slice, 1/2" thick)
Apricots, w.p.	(18 seeded)	Onions (1 large)
Artichokes, French, Globe	Cranberries (1 cup)	Pears, w.p. (2 halves)
Asparagus Beans, pod	Currants (1 cup)	Peas, canned
Beets, fresh	Gooseberries, fresh (1 cup)	Raspberries, w.p. (1/2 cup)
Blackberries (1/2 cup)	Grapefruit, fresh and w.p. (half)	Rutabagas
Carrots	Lemons and Limes (half)	Brussels Sprouts
12%		
Apple Juice (1/4 cup)	Grapes, w.p. (14 med.)	Peas, green, young
Apricots (1 1/2 small)	Oranges and Juice (one or 1/3 glass)	Tangerines (2" diameter)
Beans, Lima, canned	Peaches (1 small)	
Cherries, sour (14 seeded)	Pineapple, fresh and w.p.	Pineapple Juice (1/3 glass)
15%		
Artichokes, Jerusalem, tuber	Figs, w.p.	Plums (3 small)
Apples (1/2) and Apple Sauce	Grapes, U. S. and European	Prunes, w.p.
Blueberries, fresh and w.p.	Kumquats	Raspberries, Black, Red (1/3 cup)
Corn, Sweet, very young	Loganberries (1/3 cup)	
18%		
Beans, baked	Crab Apples	Mangos
Beans, Red Kidney, canned	Figs	Nectarines
Cherries, sweet	Grape Juice, unsweetened	Parsnips
Corn, canned	Persimmons	Pears (half)
21-27%		
Bananas (1/3 medium)	Cowpeas, Black-eye Peas,	Pomegranates
Beans, Lima, green, shelled	green, shelled	Potatoes
Corn, Sweet	Peas, green, shelled, old	Succotash, canned

Gm. = Grams. 30 Grams = 1 ounce.

Glass—means a regular household tumbler, holding 8 ounce

T. = tablespoonful.

w.p. means water packed fruit (canned without syrup).

100 Gms. meat is a piece the size of that contained in two hamburgers or 4 in. x 3 in. x 1/2 in.

200 Gms. meat (about 1/2 lb.) is piece size of regular serving steak.

The amounts of fruit in parenthesis () in the above tables may be substituted for each other, as corrections in the amount of fruit have been made for differences in food value.

The above vegetables may be substituted by increasing the amount correspondingly if a lesser value is taken, as 4 T. of a 9% vegetable in place of 2 T. of an 18% vegetable.

Salads, of lettuce and cabbage, are not in food list as food value of these vegetables is small. If oily salad dressing is used, suitable amounts of butter must be omitted from that meal.

then the amounts for DINNER are placed opposite the corresponding foods for LUNCH and vice versa. As will be mentioned later, when insulin is given, a mid-afternoon or bedtime feeding is required to prevent reactions, according to the kind of insulin used, and thus a space is provided on the food list for writing in the amounts to be taken at these times. Since the 1800 calorie diet is used most often, two forms of this are listed, one (using the top figure when there is a choice in the column) for supplying a large breakfast, and the other for those patients who prefer a smaller breakfast. On the back of the form are listed the food groups of vegetables and fruits, so that well-nigh infinite variety in foods chosen is possible. Practically any patient can grasp the need of using two tablespoonfuls of a six per cent vegetable instead of four tablespoons of a three per cent vegetable.

This form was developed by the author and has been used for four years without trouble or confusion on the patient's part. It is not copyrighted and may be copied by any doctor desiring to use it.

In a patient who has not previously received treatment and who is not severely symptomatic and without ketosis, diet alone may be tried for a week. Fractional urinalyses are done by the patient and their results are recorded by him to help the doctor in deciding if diet alone will control the diabetes. The urinalyses are done most easily and accurately by using the Clinitest set, and its use should be demonstrated by the doctor on the patient's first office visit after his diagnosis is established. Patients are eager to learn, and often can (after watching the doctor demonstrate the simple technic of the Clinitest set with water and then with glucose solution) themselves perform the test.

Of course, if the patient is severely symptomatic or shows diacetic acid and acetone in the urine, insulin from the start is mandatory.

If insulin is indicated, by inability to achieve sugar-free urine and normal fasting blood sugars after a week of diet alone, the patient must have the injection technique explained and then repeatedly demonstrated. Then the patient must self-administer an injection (of sterile saline) while in the office, as fright and unsureness are greatest at the first injection. The use of the B-D insulin kit makes the use of insulin most convenient and thus helps assure daily injection. The syringe is kept in alcohol with needle attached, and each is boiled in the doctor's office on each visit by the patient. Because alcohol can inactivate insulin, and is painful when injected, the patient must be shown how to evaporate it before each injection by repeatedly withdrawing and pressing in the plunger.

Present experience is that 30 to 50 per cent of all diabetics require insulin.^{7, 8, 10, 13, 23} There are sev-

eral types of insulin on the market. If the final dosage is less than 30 units, either regular, crystalline, or protamine zinc insulins may be satisfactory.²³ For the majority of diabetics requiring less than 30 units daily, PZI is satisfactory. Its action begins in four hours, reaches its peak in the eight to 20 hour period after administration, and gradually loses effectiveness in the 20 to 60 hour period. There is thus an overlapping of PZI effect from day to day, but this is not sufficient to make daily administration unnecessary. However, this overlapping makes a daily dosage adjustment unwise, as it takes about three days to note the consummate effect of each dosage change.

In the patients who are found to require more than 30 units daily, a combination of regular and PZI often gives best results.^{23, 24, 25, 26, 29, 33} The combination may be given in the form of separate injections of each insulin, or a single injection of a mixture of the two. The mixture is a most flexible insulin, since the relative amounts of quick-acting and slow-acting insulins can be adjusted for each individual as needed. To start with, a 2:1 mixture, a mixture of two parts regular insulin to one part protamine zinc insulin, is used. Since the mixture has an inherent instability, the most advocated technique is mixture by the patient just before use.^{25, 26} The technique of mixing the insulin is as follows:

1. Inject air into PZI bottle.
2. Inject air into regular insulin bottle, and withdraw dose of regular insulin into syringe.
3. Withdraw dose of protamine zinc insulin.
4. Draw bubble of air into syringe containing insulins and repeatedly invert syringe to mix insulins.

Globin insulin does not offer any advantages which cannot be duplicated with a mixture of PZI and regular insulin.^{7, 10, 25, 26, 29, 33} Globin insulin acts similarly to a 2:1 mixture of regular and PZI insulins, but completes its action in less than 24 hours with no overlapping of effect.

If PZI alone is being used, the late morning hour will be the most difficult time to achieve sugar-free urine without a nocturnal insulin reaction. However, with normal urine quantities a glycosuria of one-fourth to three-fourths per cent at that time can be ignored. When mixtures of PZI and regular insulin are being used, if glycosuria occurs in the morning hours after breakfast, the dosage of regular in the mixture is increased. If glycosuria occurs during the night and before breakfast, the dose of PZI in the mixture may be increased.

If PZI alone is used, it is frequently necessary to give a bedtime meal of a glass of milk and two crackers to offset the occurrence of an insulin reaction during the night. When an insulin mixture is used, it may be necessary to suggest a mid-afternoon meal to prevent the occurrence of insulin re-

actions.

If the patient is already on diet and insulin, making abrupt changes is not wise, but rather observation of the present course by fractional urinalyses and fasting blood sugars is best before changes in the regimen are instituted.

While the patient is being regulated on either diet alone, or diet and insulin, the urine sugar tests made on specimens collected before each meal and at bedtime give the best indication of the diabetes situation. We direct the patient to void and throw away the specimen an hour before the meal, then void immediately before meal time and test that specimen with the Clinitest set. The result is recorded and taken to the doctor on each visit.

Exercise, following insulin and the meal, often substitutes for increased amounts of insulin. Thus, a golf game in the afternoon may have to be compensated for by food-taking then. If it is difficult to achieve sugar-free urines before lunch, a walk around the block after breakfast may accomplish it. Because of the metabolic effect of exercise, it is wiser for the diabetic patient to avoid athletic sprees, but rather engage in about the same exercise each day.

Hypoglycemia or insulin reactions should not be feared except in older persons or those with cardiovascular disease, once the patient is informed as to their nature and treatment. They are due to missing a meal or overdose with insulin. There is often a rebound hyperglycemia following a reaction, in which the liver releases glycogen stores in excess to buffer the too-low blood sugar with the result that the blood sugar rises too high after the reaction. Thus, a urine sugar during the post-reaction period might mislead you into believing that too little insulin was given when in reality, too much was administered. One must avoid insulin reactions in patients older than 45 especially, because of the coronary ischemia which may occur with a reaction in older people.

Symptoms of an insulin reaction are as follows: (1) inability to maintain close attention—*anxiety*—emotional irritability; (2) feeling of drowsiness—weakness—*diplopia*; and (3) incoordination—*automatism*—unconsciousness. The signs are as follows: (1) tachycardia, mydriasis, perspiration; and (2) relief of all symptoms after sugar administration. Orange juice, because it contains a monosaccharide, works faster.

No mandate about the beginning dose of insulin is possible. However, in a mild case, 10 units of PZI before breakfast may safely be used at first. In the more severe case, 20 units may safely be the starting dose, and this increased every three days as indicated by urine sugar, blood sugars, and symptoms of the patient.

In follow-up visits, the following should be done

as a minimum: (1) weight noted; (2) examine patient's Clinitest record; (3) specifically ask about insulin reactions, colds or other minor infections since the last visit which might change tolerance, satisfaction with the diet, and general feeling; and (4) adjust diet, insulin, and exercise as indicated. The patient must be urged to consult you at the first evidence of any infection, or when glycosuria of over one per cent persists, or symptoms recur. Otherwise, twice weekly visits at first are sufficient, and as consistent control becomes a reality, once a week, then twice monthly, and finally once a month. The importance of continuing the diabetic regimen during health must be repeated to the patient at each visit.

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Anococcygeal Teratoma in the Newborn: Report of a Case

J. S. Hibbard, M.D., and G. J. Goodman, M.D.

Wichita, Kansas

For the development of congenital tumors, the hind end of the fetus takes one of the foremost places of importance. From the calculations of Calbert and Fochier, it appears that sacrococcygeal tumors of the newborn may be expected once in approximately 34,500 births. One-fifth of these infants are still-born in consequence of difficulties in their delivery; others born alive, perish during the early days of the postnatal period.

The teratoma is representative of more than one germ layer, frequently all three, and presents tissues of various organs in divers stages of development—from the fetal to the adult. The tissues of these various organs are represented in a notable lack of orderly arrangement. Where there are many theories—there is no known cause; the acceptable theories on the origin of these teratomas are: defective closure of certain embryonic clefts, misplaced blastomeres, and wandering germ cells in the developing embryo.

In the 74 cases reported since 1924, existence of the deformity was obvious on external examination at birth in 66 cases. Interestingly, girls predominate among the infants afflicted, the pathology being three and one-half times more common in the female. Much more rare is the occurrence of malignancy—two cases have been reported.

Characteristically, the tumor is situated between the rectum and the lower segment of the vertebral column. The area of external attachment is limited to the region of the sacrum and coccyx. The cu-

taneous surface of the tumor, of variable thickness, becomes quite thin in certain spots to which fragments of bluish membrane often adhere.

The following report of a case fits well into the classic description of this rather infrequent tumor of the newborn.

Report of a Case

The case is that of M.C., a white female infant who was admitted to the surgical ward about 36 hours after birth. The child was the result of a first pregnancy, the labor of which was uncomplicated. There is no familial history to which the pathology could be related.

Physical examination revealed a day-and-a-half-old well developed female infant in no apparent distress. Pulse 140. Respiration 22. Examination of the various systems was essentially negative with the following exception: projecting from the anococcygeal region in the axis of the intergluteal fold, was a mass, not unlike a cucumber, about ten cm long, seven cm wide and four cm thick. Its base of attachment at the anococcygeus was smaller—about 5x3 cm. The mass itself had a smooth, lobulated surface covered by thin atrophic skin, which at the inferior pole was purplish in color and on the verge of necrosis. Its consistency was soft and fluctuant and gave the impression of being loculated. It was only slightly moveable on its base. Transillumination was apparent in only a few places indicating a cystic and solid nature. No transmissible thrill was discerned between the mass and the anterior fon-

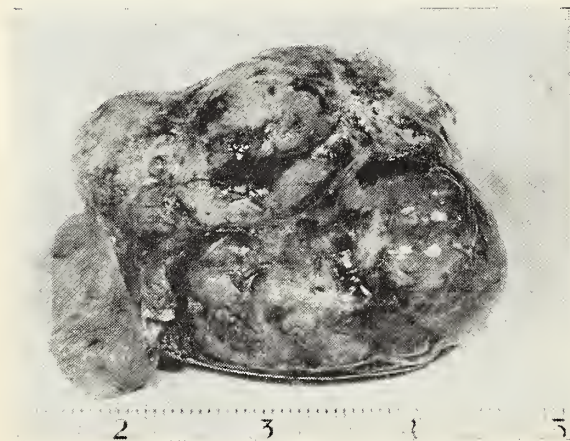


Figure 1. Photograph of the tumor intact, after removal.



Figure 2. Cross section of the tumor, showing the round white mass resembling a brain.

tanelle. X-ray examination revealed the absence of spina bifida and other bony deformities. The diagnosis of anococcygeal teratoma was made.

The infant was operated on about 12 hours later and the following procedure carried out: an elliptical incision in the skin was made about the base of the tumor and sharp dissection carried downwards to the dorsum of the coccyx. The tumor was fairly easily separated from the surrounding tissue in which it appeared to be lying. The only point of absolute attachment was by a thin fibrous cord pinning the deep surface of the tumor to the tip of the coccyx. This cord was severed close to the coccyx and the tumor removed from its bed. The skin was then undermined and the fascia and skin were approximated by layers of interrupted 4x10 silk sutures. The infant left the operating room in good condition.

The postoperative course was entirely uneventful with the exception of a very short period (30 seconds) of cyanosis following aspiration of its feeding on its sixth postoperative day.

Pathological report: the cut surface revealed a mass which was partly cystic and partly solid. In one of the cavities lay a small rounded structure the size of a pea, resembling a fetal head. The microscopic section showed variable structures. There were nu-

merous glands resembling intestinal glands containing mucin cells. Other glands show much lower epithelium. There is some muscle tissue. Some of the glands closely resemble mammary glands. There is definite brain structure with ganglion cells.

The case reported is characteristic of most cases of anococcygeal teratoma in the newborn. This pathological condition should always be remembered in the differential diagnosis of masses in the intergluteal region, for it usually lends itself to a surgical cure.

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Richter's Type Hernia of the Transverse Colon

A Case Report

M. V. Laing, M.D., and C. D. Blake, M.D.*

Kansas City, Kansas

Introduction

In a Richter's type of hernia only a part of the circumference of the bowel is involved. This portion of the bowel may rapidly become gangrenous, yet the lumen remains open to some degree. Richter first described this type of hernia in 1778. It is a rare finding. Cattell¹ noted that in 1913 R. H. Fowler reported two cases; one involved the cecum and the other the appendix. In 1928, Rhodes¹ reported 45 additional references and included three histories with a true Richter's hernia and three patients with a knuckle of small intestine in ventral herniae. In 1929, Bissell recorded two cases and Orr one in 1930.¹ Newerla and Connally² reported 230 cases of a strangulated appendix in femoral herniae. Masten³ reported a case of Richter's herniae involving the small bowel in the femoral ring. Sartorius⁴ wrote of a case of strangulated Richter's hernia of the small intestine in an indirect inguinal hernia. No report describing a Richter's type hernia of the transverse colon was found in the literature reviewed.

Richter's type of herniae occur most commonly at the femoral ring. Cattell¹ noted involvement of this site in 90 per cent of the cases. Herniation of the terminal ileum into the right femoral canal occurs most frequently. Long standing reducible herniae are more commonly involved; rarely a hernia that is irreducible or a hernia of recent origin. The amesenteric border of the bowel is always involved with no impairment of the general circulation. However, this absence of a mesentery promotes early gangrene of the contents of a Richter's hernia. Adults only are affected and women more so than men.

The symptoms and physical findings resulting from a Richter's type hernia may be minimal and indefinite. Most commonly the symptoms suggest a partial or beginning intestinal obstruction, yet a few may present the clinical picture of a strangulated hernia. Not uncommonly found is a painful and reddened tumor with a surrounding cellulitic type of reaction. There may be local tenderness with pain referred far distant from the involved point.

Case Report

G. R., a 65-year-old colored woman, was admitted to the hospital on September 9, 1948, complaining of abdominal pain of three days duration. Following a gradual onset this pain progressed in severity

and on admission was described as a non-radiating, dull, aching pain localized to the site of an old umbilical hernia. There was also minimal nausea without vomiting. Past and present histories were non-contributory. When admitted, this obese, colored woman did not appear acutely ill. Her temperature was 97.6 degrees Fahrenheit; pulse 112; respiration 28; blood pressure 124/80. Physical findings were limited to a reddened, tender mass eight by 11 centimeters in diameter located just to the left of and inferior to the umbilicus, with pitting edema of the overlying skin. An initial leucocytosis of 12,900 with 78 per cent polymorphonuclear cells was the only significant laboratory finding. With a diagnosis of an incarcerated umbilical hernia the patient was taken to surgery for exploration. At operation an incarcerated umbilical hernia with strangulation of a portion of the greater omentum and a Richter's type hernia of the left midportion of the transverse colon was found. This hernia involved approximately two-thirds of the amesenteric border of the bowel wall, which was gangrenous. The necrotic omentum was removed and a Mikulicz's type of colostomy was done to exteriorize the involved portion of the transverse colon.

The patient's immediate postoperative condition was excellent and six hours following surgery she was able to be up. In addition to the usual postoperative medications she received penicillin prophylactically. On the second postoperative day the colostomy was opened. On the eighth postoperative day the skin sutures were removed and large clamps applied to the spur of the Mikulicz type of colostomy. Digital examination of the colostomy four days later disclosed an adequate stoma between the two opposing loops of bowel.

As indicated, to this date the patient's course was uneventful. She had been up and about at will and without complaint. Her highest temperature of 100.6 degrees was on the first postoperative day and on the 12th postoperative day penicillin was discontinued even though the patient continued to run a low grade febrile course. On the 20th postoperative day the patient complained of sudden, severe pain in the right lower chest. Because of a questionable urinalysis report and a negative physical examination on this date, she was given sulamyd on the basis of a possible urinary tract infection and was again given penicillin. The highest temperature on

* Fellowship of Boylan Trust Fund.

this date was 100.4 degrees with a pulse rate of 88. On the following day she again felt well with no pain despite a temperature of 103 degrees and a pulse of 100. On the 24th postoperative day she again complained of severe pain in her right chest and had rales in both lung bases, a temperature of 100 degrees, a pulse rate of 118, and respirations of 24. During the night she also complained of some dyspnea but by the following day she again felt much better. She was given sulfadiazine and carbon dioxide inhalations, and the penicillin was continued. Blood studies were negative with a leucocyte count of 5,900 including 59 per cent of the polymorphonuclear series.

Having made definite improvement, and with normal temperature readings for two days, all antibiotic and chemotherapeutic agents were discontinued on the 27th postoperative day. Two days later an occlusive dressing was applied to the colostomy site and she then passed several formed stools per rectum. The patient felt quite well and was active although she continued to run a low grade temperature. Thirty-three days after operation she again complained of severe, knife-like pain in her right lower chest, accentuated by respiratory movements. There were rales in the lower right chest with respiration of 30 but no dyspnea or cyanosis. The blood pressure was 150/84 and the pulse 124. In addition there was a leucocytosis of 19,400 with 66 per cent polymorphonuclear cells. A chest x-ray disclosed a possible pneumonia with atelectasis in the right base. Her highest temperature on this date was 101.4 degrees. Penicillin and sulfadiazine were resumed and she was restricted to bed. The possibility of a pulmonary embolus was considered. The next day she felt much better and at this time, with a temperature of 101.6 degrees and a pulse of 124 beats per minute, there were decreased breath sounds and crepitant rales over the right lung base with decreased diaphragmatic excursion on the right side. The leucocyte count was 13,050 with 67 per cent polymorphonuclear cells. A repeat x-ray of the chest showed no change. From this date she continued to improve with an occasional temperature

reading of 99 degrees and a pulse rate range of from 80 to 100. Because of a rather rapid drop in the leucocyte count and the development of anemia during this interval, the sulfadiazine was discontinued and the penicillin continued as a single injection of 300,000 units daily. Two 500 c.c. blood transfusions were given to the patient. On the basis of a moderately rapid pulse rate, a digitalizing dose of Purodigin was given with no apparent effect. Ambulation with moderation was permitted. On her 45th postoperative day the patient was found unconscious in the bathroom, in shock, with a rapid, weak pulse, a cold clammy skin and bathed in perspiration. She was given oxygen and coramine and regained consciousness but remained in severe shock with a blood pressure averaging around 80/40, when it could be obtained. The pulse rate varied between 140 and 160 and on one occasion the respirations were counted at 32. One dose of morphine sulphate was given subcutaneously. The patient complained of no pain at this time. Marked cyanosis and dyspnea continued and all extremities remained icy cold. An electrocardiogram was taken and disclosed the probability of an acute pulmonary infarction. Death occurred six hours after the onset of this last complication. At autopsy a massive pulmonary embolus was found although the site of possible origin was not determined.

Summary

Presentation of this case of a Richter's type hernia of the transverse colon is for record only, since no reports of a like lesion could be found in the literature reviewed. The record of the patient's postoperative course and subsequent death is included for completeness. Rather unusual in itself is the story of multiple embolic phenomena and death from a massive pulmonary embolus 45 days after operation.

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CHILD WELFARE PAGE

The Stillborn

*"...While Death forbids another to wake,
And the son that it took nine moons to make,
Expires without even a twinkle."*

DEFINITION

In the United States, a stillborn infant is one of more than 20 weeks gestation who shows no sign of life, not even a heartbeat, after being completely delivered outside its mother's body.

IMPORTANCE

Added together, the stillborn form a considerable wastage of human life. Last year in Kansas there were 641 reported. For every 1000 live births there were 15 stillbirths. One out of every 75 pregnancies carried past the fifth month ended in a stillborn child.

CAUSES

Not accurately known. The reporting of causes suffers from certain errors of logic, as well as carelessness. If the fetus died in utero, some factor operating in the intra-uterine environment must be responsible for death. Prematurity and atelectasis, often given as causes, are obviously not valid; there is nothing inherently lethal in prematurity, and if an infant is stillborn its lungs cannot reasonably be expected to expand. Most congenital malformations in this age group are compatible with extended intra-uterine life. "Toxemia of pregnancy" is something less than satisfactory, as with care the fetal mortality from toxemic mothers need not show an increase over normal. "No reason" is an alarming death diagnosis; "no ascertainable reason" is attractively honest if disappointing.

Autopsy series give the most reliable data, but are not always able to fix a cause. In general, such deaths fall into three major categories: (1) *Asphyxia* or *anoxia* from birth stresses, prolonged inhalation anesthesia, compression of the cord, and especially premature separation of the placenta, (2) *Intracranial hemorrhage* from the usual reasons and (3) *Developmental Defects*, particularly of the central nervous system. A small number die from *infections*, including syphilis. There is a *miscellaneous* group, that takes in certain erythroblastotics, and a fairly large number that are *unexplained*.

PREVENTION

Possible in some cases, *but* (1) In a predominantly rural state medical attention and hospitalization are not always instantly obtainable for obstetrical catastrophies, (2) very many stillborns are prematures, with a limited life expectancy even if born alive, (3) the death of a somewhat damaged baby may be preferable to subjecting a young mother to the present and future hazards of operative delivery.

The most feasible preventive measures include: *a first-class diet during pregnancy, adequate prenatal care*, with emphasis on the control of toxemia and the evaluation of compatibility between fetal head and maternal pelvis, *continuous attention to the fetal heart rate* during labor, more frequent use of *local anesthesia*, and *avoidance of internal version and high forceps* whenever possible.

REPORTING

A nuisance required by law which must be accomplished on a special certificate. To make it contribute to a statistical tool useful to medicine, the certificate should at least contain (1) an accurate birthweight, (2) the most exact statement possible of the causes, fetal and maternal and (3) a notation as to whether the infant died before or during delivery. Without such data reporting is, medically speaking, a waste of time. The accuracy of the cause of death will usually be increased several hundred per cent if an autopsy is performed.

CANCER PAGE

Cancer of the Tongue

Malignant lesions of the tongue most frequently occur on the dorsum, lateral margins, or near the tip. For this reason the patient, as a rule, notices the lesion rather early and the doctor can quite easily find the growth during simple office examination.

Lay education is endeavoring to bring the patient in to the doctor's office at an earlier date, and periodic examinations are permitting the family physician to discover such early lesions in the office.

In general, carcinoma of the tongue is a rather vicious growth, spreading locally with rapidity and elusiveness. Metastasis to cervical glands frequently is early.

If treatment is to be successful in cases of carcinoma of the tongue, the lesion must be seen and recognized early. Treatment of the early lesions, with either irradiation or surgery, is successful in 50 per cent or more of the cases. Excision of the lesion, surgically, is accomplished by partial resection of the tongue. The cervical glands involved may likewise be removed at a separate operation. Therapy with radium or x-ray is equally as efficient as surgery, and has largely replaced the mutilating radical surgical procedures done in past years for extensive growths in this region.

Leukoplakia or any irritated area on the tongue should be viewed by the examining doctor with suspicion, and should be followed closely for the appearance of induration, ulceration, or evidence of a developing new-growth.

Biopsy of these lesions is readily accomplished and not only serves to establish the exact diagnosis, but may assist the radiologist or surgeon in planning the course of therapy.

PRESIDENT'S PAGE

Dear Doctor:

The statement has been made as one of fact by one of the proponents of socialized medicine that the only people in the United States receiving adequate medical care are the very wealthy living in large urban areas. Let us ask the question, is this statement correct? Is it based on fact? Is there a conscience back of it? Is it fair to the thousands of American doctors who are in many instances devoting 15, 18 or 20 hours a day to caring for the sick?

Kansas is most certainly not composed of wealthy urban people. It is a rural, sparsely populated state. Let us examine the statistics concerning the kind of medical care Kansas people are receiving. You will find that 50 years ago there were 20 or more maternal deaths for each 1,000 live births. That has been consistently reduced until in 1948 it stood at less than one maternal death per thousand. In this rural area where the people are without adequate medical care, according to some opinion, our maternal death rate is considerably better than the national average and well toward the top of all states.

According to the Surgeon General the mortality due to battle wounds was reduced 600 per cent in the 30 years between World War I and World War II. These statistics, translated in terms of industrial health, would indicate that the industrial worker can expect a similar benefit as to morbidity and mortality. Comparable advancements have been made in most fields of medical care, as may be illustrated in the normal course of pneumonia today as contrasted with the stormy six or eight weeks illness of a few years ago.

In talking with your patients about socialized medicine you can draw many other illustrations from your own private practice. You will find that there are arguments based on facts to support the stand we have taken in an effort to preserve the American way of life. The effectiveness of these arguments depends upon the way in which you present them to your patients. You have a definite responsibility to your patients and your community.

Sincerely,

Haddon Peck, M.D.

EDITORIAL COMMENT

The A.M.A.—A Union

Mr. Becker, we are glad you came to Kansas to tell our Society what your United Automobile Workers want in the way of medical care. Much of what you said is true, and your willingness to discuss your needs will certainly make future negotiations between your group and ours easier.

But there are some words which you and we do not understand alike and those should be clarified in the beginning. For instance, you said the A.M.A. is a union just like the C.I.O. Perhaps we fail to understand your union, but we can tell you about ours. Then you decide if there is a difference—or if you still consider us a union at all.

In its 100-year history the American Medical Association has raised the standards of its members, but along different lines than yours. Our union has shown little if any interest in shortening our hours or in raising our income. Our union has made it increasingly difficult for us to join, requiring high educational standards for admittance. Now, this is not aimed to benefit us; it is done for the benefit of our employers. Our union can now guarantee that we are qualified for our job, which assures the prospective employer that our work is dependable.

Our union also inspects the tools with which we work. We are regularly instructed in the proper use of these tools so they will be safe. Yes, we stress safety as constantly as you do, but there is a difference. Our union demands safety for our employers, not for ourselves. Not only that, but we constantly search for more efficient tools. You might call these labor saving devices. They reduce the work we need to do, and we regularly replace our tools for others that are better. Again that is done to benefit our employer—it is not directed to aid us.

In fact, the union that is the A.M.A. constantly suggests ways to prevent the need for our services and to shorten the term during which our work is necessary. This is a saving to our employer both on a unit cost basis and in terms of increased production.

The medical trust, as you called it, has never staged a strike or a slow down at any time, neither for shorter hours, for better working conditions, nor for higher pay. And when long periods of overtime are required, more often than not without overtime pay, during war, in an epidemic, or at the scene of a disaster, we have continued to work because we believe our services to be necessary.

There is another difference too. Our union spends much of its time studying ways in which our services can be obtained more economically. You will call this collective bargaining but we contract with our employers, the laborer you represent, the farmer, the

merchant, on a basis whereby he may obtain more efficient work at less cost. We are earnestly endeavoring to safeguard him against the hazards of unexpected expenses through prepayment plans. That again is a union activity directed toward giving the employer more for his money.

And our opposition to programs of federal compulsory tax supported plans is not, as you said, selfish. The record in nations where this has been tried proves its inefficiency, and even if we try to profit by the mistakes made elsewhere the government of the American people has, you will surely agree, not distinguished itself in recent years for economy. We want to give you the best service in the world at a cost that will not disturb your economic welfare. We are perfectly willing to negotiate with you on this point, but we know neither goal can be achieved under government direction. So in that realm our union has again spoken out for us, but once more in your own defense, not ours. The A.M.A. is interested in health legislation but it is your health rather than ours that has prompted this interest.

So you see, Mr. Becker, our union works toward increasing our efficiency so our employer may realize greater profits of his own. We rather regard our union as partners with your union and all persons in this nation. We believe we can help you achieve some of the goals you seek, that when your economic conditions are good ours will be good too, that this practice will make ours a stronger and a better nation of free men than we have been before. Therefore, our efforts are directed toward those fields.

Now, Mr. Becker, if these are proper ideals for a union, then we are a proper union. If not, then surely one of us is wrong either in our philosophy or at least in our understanding of the word union.

Charles S. Huffman, M.D.

General Practitioner of the Year

A blend of the old and the new in medical practice, embodying the best of the two periods, is found in the person of the Kansas General Practitioner of the Year, Dr. Charles S. Huffman of Columbus. He typifies the physician most often referred to as the "old country doctor," but he also exhibits the characteristics of the modern physician. He is unimpressed by today's emphasis on good public relations for the profession, for he considers that only an expression of the tenets he has always held—that in addition to providing good medical care for his patients a physician must maintain an interest in his community, serve his state and his nation, and give freely of his talents for any cause.

Dr. Huffman's service to his community began

in 1890, when he opened his office in Columbus, and today at 84 he is still active in his profession. His service to the Kansas Medical Society, including 15 years as constitutional secretary and two years as editor of the Journal, was climaxed in 1917 by his election to the highest office the Society can bestow, the presidency.

It is with good reason that Columbus looks upon Dr. Huffman as its most eminent citizen for he has distinguished himself in many fields other than medicine. In spite of a busy practice he accepted the responsibility of representing his community in the state legislature, and for 16 years he was a member of the Kansas Senate, leaving that post only to serve two terms as lieutenant governor. As a state official he was instrumental in establishing the University of Kansas School of Medicine at Kansas City and in securing appropriations for public health projects, hospitals and state institutions. Later, when the State Board of Administration was created, he became its first chairman and held that important post for six years.

In times of national emergency Dr. Huffman volunteered his services to the nation. During the Spanish-American war he served as medical officer of the famous 20th Kansas Regiment of United States Volunteers in the Philippine Islands. During World War I he was adjutant general of Kansas, in charge of administering the first selective service draft which inducted more than 85,000 young men into all branches of service.

Kansas takes pride in this statesman and patriot and has honored him in many ways. The Kansas Medical Society too recognizes his accomplishments and takes pleasure in bestowing on him the title "General Practitioner of the Year."

Help for the Hard of Hearing

Progress toward aiding the hard of hearing and the deafened is comparable to other advancements in medicine. Mechanical devices such as hearing aids are effective in extending the span of hearing for many who would otherwise have lost contact with the world of sound. Numerous surgical procedures have been developed that also contribute toward the reduction of hearing loss.

The fenestration operation, for instance, is today well out of the experimental stage and has been placed in the category of accepted procedures. Even though the fenestration procedure remains beneficial only for a time in most cases, it is nevertheless an extension of the years during which a patient may hear. And while it is true that fenestration is not universally successful, these statistics compare favorably with many other surgical procedures. In a series

of 151 cases reported in the New England Journal of Medicine recently, less than one per cent showed a hearing loss after the operation and only 13 per cent failed to improve beyond the hearing level prior to the operation. Cases of course must be selected, and considerable skill is required in the operative technique. However, the procedure is not especially hazardous and very few complications are likely to occur.

Of more immediate importance, however, is the child with handicapped hearing. It has been estimated that there may be two million such children in the United States, that possibly the percentage is as high as one in seven. Hearing problems are most frequently discovered by the family physician, and success of any program to restore the hearing of these children or to adjust them to their hearing difficulties depends largely upon the good advice given the family by the family physician. If every physician would take a few moments to encourage families of deaf children, it is quite possible that many would ultimately have their hearing improved.

The physician should know that Kansas is conducting a clinic for the parents of pre-school deaf children this summer. It will be held at the School for the Deaf in Olathe, and the parents of all deaf children of pre-school age are invited to attend. There is no expense to the parents as even the living costs will be paid. This program has been approved by the Kansas Medical Society and is under the medical supervision of the University of Kansas School of Medicine. Parents who are interested should be instructed to write Mr. Stanley D. Roth, superintendent, Kansas State School for the Deaf, Olathe, Kansas. This should be done early because the clinic will be held between August 24 and August 31.

This again is a public service project initiated by the physicians of Kansas for the benefit of the people of this state. Any physician knowing of a family that will qualify for attendance at this clinic should notify that family. He will be rendering them a service by recommending their attendance.

Auxiliary Holds Annual Meeting

The annual meeting of the Woman's Auxiliary to the Kansas Medical Society was held at Topeka during the Society meeting. The following officers were elected: president, Mrs. Charles H. Miller, Parsons; president-elect, Mrs. John A. Billingsley, Kansas City; first vice president, Mrs. C. C. Tucker, Wichita; second vice president, Mrs. M. A. Brawley, Frankfort; third vice president, Mrs. O. W. Longwood, Stafford; recording secretary, Mrs. W. J. Biermann, Wichita; corresponding secretary, Mrs. Guy W. Cramer, Parsons; treasurer, Mrs. H. L. Collins, Beloit.

90th Annual Session, Kansas Medical Society

The 90th annual session of the Kansas Medical Society was held at Topeka, May 9-12, 1949. Although a complete count of those attending the various sessions is not available, registrations at the entrance to the scientific assembly hall showed the following totals: physicians, 642; members of the Woman's Auxiliary to the Kansas Medical Society, 250; medical assistants, 166; guests, 185.

The scientific program followed the usual pattern, presenting nationally known speakers on a number of topics of interest to both general practitioners and specialists. In addition, nine Kansas physicians participated by presenting 20-minute papers in three symposia. The first, a symposium on heart disease, was of primary interest to internists. Another attracted an audience of surgeons, a symposium on varicose veins. The third, on labor and postpartum care, was attended largely by obstetricians. The usual round table luncheons, with guest speakers taking part in informal discussions, completed the scientific program.

An innovation at the 90th annual session was the presentation of lay speakers, discussing compulsory health insurance, at a meeting to which the public was invited. At this session on the afternoon of May 12, the Jayhawk Theatre was well filled with persons eager to hear Mr. Harry Becker, legal counsel for U.A.W., Detroit, debate the question of socialized medicine with Mr. Stuart Heydon, news analyst, Washington. Following their formal presentations, the program was opened to questions from the floor. Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, served as moderator.

The pattern of the annual banquet was also changed this year to provide an opportunity for recognition of all living past presidents of the Kansas Medical Society. Each was presented a specially made gold key designed to show the staff of Aesculapius before a sunflower background. The name of each past president and the date of his term of office were engraved on the back of his key. Presentations were made to Dr. George M. Gray, Kansas City, who served from 1912 to 1913; Dr. Oliver D. Walker, Salina, 1915-1916; Dr. Charles S. Huffman, Columbus, 1917-1918; Dr. Middleton L. Perry, Topeka, 1922-1923; Dr. Alfred O'Donnell, Ellsworth, 1924-1925; Dr. Earle G. Brown, Topeka (now of Mineola, New York), 1927; Dr. Louie F. Barney, Kansas City, 1929; Dr. Erastus S. Edgerton, Wichita, 1930; Dr. Edgar C. Duncan, Fredonia, 1931; Dr. James D. Colt, Sr., Manhattan, 1933; Dr. John F. Hassig, Kansas City, 1935; Dr. Jacob F. Gsell, Wichita, 1937-1938; Dr. Noble E. Melencamp,

Dodge City, 1938-1939; Dr. Clifford C. Nesselrode, Kansas City, 1939-1940; Dr. Forrest L. Loveland, Topeka, 1940-1941; Dr. Henry N. Tihen, Wichita, 1942-1943; Dr. John L. Lattimore, Topeka, 1943-1944; Dr. William P. Callahan, Wichita, 1945-1946; Dr. William M. Mills, Topeka, 1946-1947; Dr. Laurence S. Nelson, Salina, 1947-1948, and Dr. Oscar W. Davidson, Kansas City, retiring president.

The keys for two living past presidents who were unable to attend the meeting were sent to them later, Dr. Francis A. Carmichael, Osawatomie, (now of Kansas City, Missouri), 1925-1926, and Dr. John A. Dillon, Larned, 1928.

Special recognition was also accorded Dr. Charles S. Huffman, Columbus, who was named "Kansas General Practitioner of the Year" for the year 1948, and an engraved desk set was presented to him.

Awards for scientific exhibits at the 90th annual session, judged by out of state guest speakers, were presented to the Department of Anesthesiology, University of Kansas Medical Center, first prize, for a display on modern methods of anesthesia; Hertzler Clinic, Halstead, second prize; Kansas Society of Technologists, third prize.

Officers for 1949-1950

At the close of the 1949 session Dr. Haddon Peck, St. Francis, became president of the Society. Other officers serving this year, elected at the meeting, are as follows: president-elect, Dr. F. R. Croson, Clay Center; first vice president, Dr. Harold H. Jones, Winfield; second vice president, Dr. C. H. Benage, Pittsburg; secretary, Dr. Dale D. Vermillion, Goodland; treasurer, Dr. J. L. Lattimore, Topeka. Delegates to meetings of the House of Delegates of the American Medical Association are Dr. Philip W. Morgan, Emporia, and Dr. John M. Porter, Concordia.

Councilors for 1949-1950

Because of war service, deaths in office and interrupted terms, an adjustment in the length of Council terms became necessary this year to place membership of that body on a constitutional basis—four expiring each year. To compensate for those irregularities, three councilors named this year will serve for shorter periods of time than the regular three-year term. Membership on the Council for the 1949-1950 year is as follows:

District 1—Dr. W. L. Anderson, Atchison, elected in 1948 to a three-year term expiring in 1951.

District 2—Dr. A. J. Rettenmaier, Kansas City, elected in 1949 to a two-year term expiring in 1951.

District 3—Dr. J. G. Hughbanks, Independence,

elected in 1949 to a three-year term expiring in 1952.

District 4—Dr. F. C. Taggart, Topeka, elected in 1949 to a one-year term expiring in 1950.

District 5—Dr. L. J. Beyer, Lyons, elected in 1947 to a three-year term expiring in 1950.

District 6—Dr. J. V. Van Cleve, Wichita, elected in 1949 to a three-year term expiring in 1952.

District 7—Dr. Hugh A. Hope, Hunter, elected in 1948 to a three-year term expiring in 1951.

District 8—Dr. W. A. Smiley, Junction City, elected in 1948 to a three-year term expiring in 1951.

District 9—Dr. Marion J. Renner, Goodland, elected in 1948 to a two-year term expiring in 1950.

District 10—Dr. Murray C. Eddy, Hays, re-elected in 1949 to a three-year term expiring in 1952.

District 11—Dr. C. V. Black, Pratt, elected in 1949 to a one-year term expiring in 1950.

District 12—Dr. R. G. Klein, Dodge City, elected in 1949 to a three-year term expiring in 1952.

President's Address

The following address, entitled "Medical Objectives," was presented by the president of the Kansas Medical Society, Dr. O. W. Davidson, Kansas City, at the 90th annual session.

While we are celebrating accomplishments of the 90th anniversary, we should not be unmindful of how much we are indebted to our friends, and the many problems which still confront us.

In some instances the question is raised, should we as a scientific organization get mixed up in politics.

The answer to that question is—we are mixed up in politics. Whether we like it or not we have been drawn into a conflict which involves everyone. Medicine has been brought under political attack.

We cannot be isolationists or maintain a position of status quo and uphold the oath of Hippocrates or the honor of our profession in the eyes of the public.

My objective in presenting this discussion is to convince each one of you that it is your task and mine to enlist the support of every member of the profession and the wife of every member plus all their relatives and friends for the solution of problems which confront our communities today.

We need to combine our efforts with those of other professional and civic organizations to carry to the public irrefutable facts concerning the system of free enterprise which has made the United States great, as opposed to bureaucratic vices and centralization of authority.

Witness, if you please, what was accomplished by a good blend of politics and public relations in the 1949 session of the Kansas legislature in the interests of public welfare.

Through cooperative efforts common objectives became a reality. Other objectives invite our attention and cooperation.

I was impressed a few years ago when I heard about the objective of a boy about six years old. His starry eyes glistened in the lamp light as he lay aside some medical journals with the remark, "Well, Dad, you can bring home some more, I'm through with these."

His dad asked him what he was going to be when he grew up. "Oh, I guess I'll be a doctor," answered the boy. In answer to the question why he wanted to be a doctor, he promptly gave four reasons: "So I can have patients, take rocks out of people, stay up late at night, and make speeches."

Every boy has an objective which he should be privileged to cultivate. Whether these boys become doctors and whether they are privileged to practice as you and I practice today depends upon factors which you and I can and must do something about.

In following the development of any child we witness many examples of individual and cooperative objectives.

The doctor who delivers a boy and the nurse who assists him make their contributions to his future.

The ambulance driver, the elevator operator, the hospital technicians, record clerks, dietitians and cooks as well as the pharmacist, pharmaceutical and surgical supply firms all share in the objectives which bring a child into the world.

The minister who baptized the boy I started to tell about, the banker who handled the pennies from his piggy bank, the insurance agent, his dentist, the photographer, the clothing merchant, the groceryman, the veterinarian who took care of his dog and his pony, and his grandfather and grandmother on the farm all played an important part in his life.

In order to complete the picture of such a boy we must remember the attorney who will make his last will and testament, all his associates through life, and even the mortician who will lay him away.

Such a boy cannot become a self-made man. He is indebted to so many who make his progress possible. If he fulfills his mission in life he must be fully aware of his responsibilities to those who make it possible for men to achieve their objectives.

If he should become a doctor, he should be mindful of his potential worth as a leader in his community. The late Clyde Coffman very aptly indicated these potentials when he addressed students at the University Medical Center, on the occasion of the first Kansas Medical Society Day at the school. He said, "When I was in politics and ran for a political office, I wanted first and most of all the endorsement of the doctor in my community."

That statement is a worthy challenge to all of us. The medical profession and all its allied groups might encourage many properly qualified men to seek public office.

Whether a boy gets into the practice of medicine today depends almost entirely on his own ability and his singleness of purpose to achieve his ideal.

Medical standards are not set up to keep boys from entering the medical schools. Some fail to make the grade because they cannot show evidence of an ability to render the type of service which the public deserves.

If a doctor measures up to the trust reposed in him, he must be of high character, exhibit signs of scientific achievement, and have the ability to understand and cope with the problems of his fellow men.

In order to insure medical service as a free enterprise, we must constantly strive to rectify errors within our own profession. We must endeavor to fuse our objectives with those of the public and clear up the confusion that exists today concerning health problems.

Some say it cannot be done. That is what Thomas A. Edison was told one time by one of his research workers who had failed over 700 times to accomplish an objective. Edison told him to keep on trying, that he had merely found 700 ways that wouldn't work.

The accomplishments of the past year in Kansas indicate what can be done when statesmen, tradesmen, farmers, businessmen, women's organizations and professional men cooperate to solve common problems.

It is not too late to prove the power of free enterprise. The people can and will solve the problems of health and economics in one way or another. There is every reason to believe their solution will be sound, if they are equipped with true facts. It should be our objective to help give such facts to everyone.

Already we are witnessing the migration of young doctors into Kansas as a result of enlivened community activities and inducements to doctors to locate throughout the state.

These doctors are coming to Kansas with an assurance of immunity from medical isolation. The advantage of refresher and postgraduate courses at the University Medical Center and refresher courses in various areas of the state makes it possible for them to maintain a high level of proficiency.

Expansions at the Medical Center will help to maintain an adequate flow of physicians, nurses, technicians and dietitians to render proper health services to the people of the state.

We as members of the profession should help coordinate the activities of our Medical Center with

those of the Kansas Medical Society, the State Board of Health and the Blue Cross and Blue Shield in the interest of public welfare.

The private practice of medicine at our Medical Center should be limited as much as possible, else the school automatically puts itself in direct competition to its own product.

To avoid the necessity of such competition we as a profession must interest ourselves in obtaining an adequate operating budget. At the present time our Medical Center must earn 75 per cent of its running expenses through the services it renders.

With proper understanding, patience, and effort present inadequacies in all branches could be overcome. It is not logical to expand hospitals and invite additional service demands without providing well equipped, properly trained personnel to render that service at a high level.

While our Medical Center devotes itself to the production of trained personnel we should expand some other objectives. Blue Shield and Blue Cross plans should be tailored to fit public needs.

You and I know that adequate health service can be rendered far more economically through voluntary prepayment non-profit plans than by any compulsory taxation scheme yet devised. Our task is to win public approval for our convictions.

This can be done through good public relations and constructive planning with our allied groups, our Auxiliary, our medical assistants and persons in every line of endeavor who cherish their freedom of enterprise.

Administration leaders in Washington are proposing, for the United States, essentially the same system of taxation and health control as that now in operation in Great Britain, New Zealand and other countries. That system has put practically every trade, business, and profession under bureaucratic dictatorship.

The system is costing every Britisher 46 cents out of every dollar he earns. In addition to this he has little or nothing to say about when, where, or how he gets his service. He must pay the tax regardless of his religious convictions, or his ability or desire to pay for private services of his choice.

Tailoring prepayment voluntary non-profit plans to satisfy public desire means more than just the expansion of enrollment.

It means expansion of benefits to both patients and physicians. It means revision of service payments for medical illnesses comparable to those now given for surgical cases. It may necessitate a revision of premium rates and provisions for maximum, average and minimum types of service contracts optional to the subscriber.

It means honorable adherence to terms of the

contract by all parties concerned. Every doctor must accept as full payment for his services the fee designated in the plan, unless there is ample reason (known to the patient) to justify additional charges.

Avaricious tactics which abuse public confidence and trust in the profession are inexcusable.

Although we have substantial reasons for opposing compulsory health insurance legislation, we recognize the need for tax assistance to sustain adequate health service at the proper level for everyone.

This assistance could be expended more judiciously and more economically through a combination of private and public interests in each state rather than by national politically controlled agencies in Washington.

We should endorse public assistance as a subsidy for health training facilities to provide an adequate number of trained personnel. Such assistance is needed to help provide adequate hospital and clinic facilities to meet community area health needs. Public assistance is needed to aid in the continuation and expansion of research projects and postgraduate education. This type of assistance should be available to eradicate the environmental causes of disease in conformity with rules and regulations established by our own State Board of Health. It should be used to cover Blue Shield and Blue Cross benefits for the indigent and as supplemental assistance to the semi-indigents and those who become medical indigents.

You may feel that the promotion of such a program is too great a task for you to undertake. Let me tell you of a recent experience.

I chanced along the street one hot day last summer and saw a bedraggled little girl about seven or eight years of age sitting with her bare feet in a puddle of water by the curbing. She was holding a baby, one of those fat squashy babies that was near the size of the little girl.

I said to her, "That's a pretty big load for you, isn't it, Sis?" To which she replied, "He ain't heavy; he's my brother."

I thought to myself, as I walked on, I belong to a number of organizations which teach the brotherhood of man, but none ever exhibited anything that impressed me more forcibly than did that little snub-nosed girl with her matter of course remark, "He ain't heavy; he's my brother."

It seems to me that we should not think that making plans for our brothers' welfare is too great a task.

Busy as you and I may be in the practice of medicine we should not fail to realize that sinister influences and questionable philosophies underlie much of the current legislation and restlessness in our country today. Much more than the practice of medicine is demanded of the American physician

today, if the common man in this country is to retain this freedom.

Now is the time for each of us to stand up and be counted. It is time for each of us to emphasize our convictions about the evils of compulsory health insurance with facts to the public. Extra taxes imposed on employers will cause prices to go up and living standards to come down. Bureaucrats, not doctors, will determine eligibilities for health service. The doctor's file will no longer be a confidential record between himself and his patient. The proposed system of taxation means further reduction of the take-home pay for everyone. Freedoms disappear but taxes go on forever.

In the 47th chapter of Genesis the story is told of men who went to a ruler and told him they were without bread for their families and feed for their stock. He gave them bread but took control of their stock. Later he gave them more bread, and took over the control of their farms. In a short time they had lost all their freedoms and were completely at the mercy of that ruler.

History repeats itself. Can we afford to let our patients barter their freedoms with the power hungry schemers in Washington? Are we not interested in bearing a share of our brother's load? Must we be reeducated to become human again? If so, we have missed the biggest thing in life, which that little girl had growing in her heart. "He ain't heavy; he's my brother."

In contrast to our forefathers, who had the quaint idea that early to bed and early to rise, would make a man healthy, wealthy and wise—enough to support himself and his family, these power hungry schemers in Washington have conceived the idea that the government could and should support the people. This group is now trying to convince everyone that they can go to bed late, get up when they please, and Uncle Sam will take care of their health and everyday needs.

Sober reasoning should convince anyone that this Utopian idea is not compatible with an excessively heavy tax burden. Our task is to stimulate sober reasoning.

I hold to the contention that a properly informed public is an intelligent public. If properly informed the American public can and will cooperate to establish a voluntary system of prepayment plans for health service. It is my opinion that we should make ourselves more audible through all of our allies, to the end that true facts are properly disseminated to every person in America.

Your impatience with the American Medical Association may be justifiable. Your embarrassment regarding the editor of the Journal is shared by others. This is not the time, however, to curtail your

efforts in the interest of public welfare because of intraprofessional differences. The public is viewing with interest the profession's response to the A.M.A.'s call for an educational campaign fund.

Too many Americans are unaware of the fact that revolution is a department of knowledge. It has its own philosophies, its own text books and its own intellectual instructors who set down the techniques to be employed.

It should not be difficult for anyone to understand how compulsory health insurance fits into the scheme of social revolution.

Many people are suspicious of the medical profession's motive in the promotion of this educational campaign. Many are willing to believe that in the scheme proposed by the government they may get something for nothing. Suffice it to say some members of our profession have given many the right to feel that they receive too little for what they pay under our present system.

Reflect upon how the apostles of Marxianism have used such beautiful terms as "Security," "Social Progress," "Planned Economy," "Freedom from Want and Fear," and promises of "Insured Health" to charm and dull the senses of the American mind so it will fail to observe the subtle shift to a centralization of authority. And, last but not least, the misuse of those who now consider it a "Holy Duty" and a "Mandate of the People" to fight for these measures.

It has often been said, the weaker the argument the stronger the words. In analyzing arguments presented by proponents of compulsory health insurance, I am reminded of the minister who found this notation penned in the margin of his sermon notes, "Logic is weak here, yell like hell."

The power hungry schemers always preach sacrifice. They always denounce internal corruption. They promise a paradise to those who renounce everything known to be worth while. They work on the theory that if they know how to rule a single man they can gain all mankind.

Men who think for themselves—not of themselves—have a keen sense of values. They are great men. They are a detriment to these social schemers. Happy men are self sufficient and happy men hinder plans of the schemers; so greatness and happiness must be destroyed.

If standards of achievement are open to all, but are adapted to those least capable, then the incentive for effort is killed in all men, great or small. For, to praise mediocrity is to kill the incentive to achieve perfection.

If a man is made to feel incapable of achieving his goal, he develops a sense of guilt and a lack of reverence for things worth while. Eventually he will give up all ideals and all aspirations.

This is no time for members of the medical profession to lose faith in their ideals and their objectives. It is not the time for us to shock our fellow men as did the little boy in a crowded street car on his way home from Sunday School when he cried out, "I lost my faith in God." He had lost a little picture card with those words, "My Faith in God," inscribed on it.

This is the time for us to manifest our faith in things worth while. It is our task to assist in every way we can to give true facts that will bolster man's faith in his ability to be self reliant, to be independent and to reverence his freedom. We must help to steer him away from what he might think is a better system of health service and provide him with a plan for high quality service at a price he can afford to pay.

If one listens to the radio or reads the newspapers and magazines these days there can be little doubt about public unrest and uncertainty.

It would seem to be a most logical time for us to help squelch this revolutionary movement on the part of power hungry political schemers and their bureaucratic parasites with a constructive movement while people are looking and listening for the solution to their problems.

Great Britain has boasted that she might lose many battles but never the last one. Let us pray that they may win the next one for freedom. Medical progress stopped in Great Britain when defensive tactics failed to halt the advances of socialization. Thank God, we are not in Great Britain, but we do need here an offensive for the American way of life.

There could be no better time for us to take the offensive. There was a time when we were without prepayment plans for sickness benefits. That is not true today, thanks to the political schemers. Their radical innovations spurred the medical profession into a more closely knit organization which has worked more effectively to meet the needs of the people.

We can advance now without too many apologies. Voluntary medically sponsored health service plans are past the experimental stage. The rapidly swelling tide of enrollments gives evidence of the need that existed for such plans, and proves that Americans desire to retain their free choice of physicians and other virtues that go with a representative form of government.

All the members of every group represented by those connected with the boy who had four reasons for wanting to be a doctor have a stake in this enterprise for freedom.

It should not be difficult for you to understand why I should like to have you take an interest in the objectives of so many people, and the potential of their assistance.

The boy who expressed his objective some years ago is now a freshman in college. His younger sister is looking forward to the time when she can enter training to be a nurse. His older sister will graduate from the university this year to enter the field as a medical social worker. I know the girls are interested in this problem for "He is their Brother."

I can well remember when those girls were just little tots. It didn't seem to worry them one bit if they or their playmates broke their dolls or toys. Many a time I have heard them say, "My daddy can fix that." I really would like to justify the confidence those girls had in their daddy's ability to fix things. I would like to help fix things too, so their brother can have patients and be the free choice of those patients. I hope he is qualified, by proper training in a school free from government control, to take out rocks. I hope he can stay up late at night if he chooses and make speeches as he pleases.

I am sure that there are many, many families in America with objectives related to ours. It is time for us to sit down with our neighbors and friends and discuss these problems without passion or prejudice. Such conferences might reduce the differences that now exist between medical needs and medical wants. We should strive to improve our present system of medical care rather than copy the errors of other countries.

**Official Proceedings First Session, House of Delegates
May 10, 1949**

The president, Dr. O. W. Davidson, Kansas City, called the meeting to order and asked the secretary to read the minutes of the previous meeting. Upon a motion by Dr. George Gsell, Wichita, which was seconded by Dr. Clyde Miller, Wichita, with the unanimous consent of the body, it was determined to accept the minutes of the last annual session as published in the Journal.

Dr. A. W. Feghtly, Wichita, sergeant at arms, announced that there were 81 delegates present and 21 officers, councilors and past presidents, making a total of 102 voting delegates, enough for a quorum.

Dr. P. W. Morgan, Emporia, condensed the councilors' reports. By unanimous consent this report was approved.

Dr. J. M. Porter, Concordia, reported on the standing and special committees of the Society. It was then moved by Dr. Porter, seconded by Dr. J. D. Colt, Jr., Manhattan, that all committee reports be approved. This motion carried unanimously.

Several resolutions were read and discussed. Dr. A. W. Feghtly, Wichita, chairman of the Committee on Constitution and Rules, presented an amendment to the constitution concerning the election of officers. It was moved by Dr. Clyde Miller, Wichita, seconded by Dr. George Gsell, Wichita, that this

amendment be carried over to the next meeting for action. Motion carried.

Dr. George Gsell, Wichita, then presented a resolution relative to physicians volunteering for service with the armed forces. He urged the adoption of the resolution and it was moved by Dr. Clyde Miller, Wichita, and duly seconded, that this resolution be carried over to the next meeting of the House of Delegates. Motion carried.

A resolution relative to a civilian defense program for Kansas was presented by Dr. George Gsell, Wichita. Dr. Gsell moved that this resolution be carried over to the next meeting of the House of Delegates. Dr. L. S. Nelson, Salina, seconded the motion, which carried unanimously.

A third resolution was presented by Dr. George Gsell, Wichita, regarding medical care as practiced in the armed forces and in the Veterans Administration. It was moved by Dr. Gsell, seconded by Dr. H. P. Jones, Lawrence, that this resolution be considered for final action at the next meeting of the House of Delegates. Motion carried.

Dr. L. R. Pyle, Topeka, editor of the Journal, presented the report of the Editorial Board, printed elsewhere in this issue. It was moved by Dr. Clyde Miller, Wichita, seconded by Dr. Louie Barney, Kansas City, that the report be approved. Motion carried.

Mr. Oliver E. Ebel, executive secretary, reported on Society activities during the past year.

The president asked Dr. D. D. Vermillion, Goodland, for his report as constitutional secretary. Dr. Vermillion reported that the Society, as of May 10, 1949, had 1,316 paid memberships, 97 honorary memberships, five service memberships, 41 members on leave of absence, 164 members in arrears, or a total of 1,623, a decrease of eight over the previous year.

Dr. J. L. Lattimore, Topeka, treasurer, reported on the finances of the Society.

The president called for a report from Dr. P. W. Morgan, Emporia, on the Chicago meeting of the House of Delegates of the American Medical Association last June. Upon a motion by Dr. George Gsell, Wichita, seconded by Dr. Clyde Miller, Wichita, this report was approved.

There followed a report by Dr. J. M. Porter, Concordia, on the meeting of the House of Delegates of the American Medical Association at St. Louis in December, 1948. This report was previously published in the Journal and upon a motion by Dr. George Gsell, Wichita, duly seconded, was unanimously approved.

The president introduced four guests present: Mrs. Charles Miller, Parsons, president-elect of the Woman's Auxiliary to the Kansas Medical Society;

Mrs. B. A. Nelson, Manhattan, corresponding secretary of the Auxiliary; Mrs. Marjorie Euler, Topeka, past president of the Kansas Medical Assistants' Society, Mrs. Pauline Keller, Topeka, past president of the Shawnee County Medical Assistants' Society.

The president announced that a caucus should be held by each of seven councilor districts, Numbers 2, 3, 4, 6, 10, 11 and 12, to determine their choices for councilors.

There followed a discussion of the election dates of county societies. It was suggested by the president that the House of Delegates recommend to the county societies that officers be elected in the spring of the year and, where possible, take office with the beginning of the summer season. It was determined that this should be put into the form of a motion, to be acted upon at the second meeting of the House of Delegates and it was so done.

The president introduced the president-elect, Dr. Haddon Peck, St. Francis.

After a brief discussion of the \$25 special assessment of the American Medical Association Dr. A. W. Fegtly, Wichita, asked if the secretaries of the county societies might be advised as to how many have paid from each county. Dr. Peck assured the group that this could and would be done.

The president called for new business. Dr. C. O. Meriderth, Jr., Emporia, reported on the Kansas Medical Assistants' Society meeting held May 8 and 9, 1949, and urged continued financial support to this group. Dr. F. R. Croson, Clay Center, made a motion which was duly seconded that financial support be given the assistants' organization. Motion carried.

Mr. Oliver E. Ebel, executive secretary, was asked to read two resolutions which had been prepared by a member of the Blue Shield board. It was moved by Dr. J. M. Porter, Concordia, and duly seconded, that a reference committee be appointed to study the resolutions. Motion carried.

Dr. D. R. Bedford, Topeka, introduced a resolution relating to Blue Shield which was accepted for consideration.

Dr. Clyde Miller, Wichita, made a motion that the resolution printed below be accepted. It was duly seconded and carried. The resolution follows:

WHEREAS, the principle of private enterprise has gained for the United States of America the position of world leadership; and,

WHEREAS, federal control of industry, commerce and professions is completely and diametrically opposed to the principles of free enterprise; and,

WHEREAS, where governmental controls have been tried, there is no basis in fact to prove that such control is of benefit to a free people but,

rather, that it is repeatedly used to bind the people to a paternalistic government; and,

WHEREAS, the government cannot give to its people any assistance it does not first take from the people; and,

WHEREAS, in such procedures the people become mere vassals of the state,

BE IT RESOLVED that we, the House of Delegates of the Kansas Medical Society, meeting in annual session this 10th day of May, 1949, do go on record as being

1. Irrevocably opposed to federal control of any industry, commerce or professions, which have heretofore been or are now promoted and motivated by individual free enterprise; and,

2. Particularly opposed to compulsion of any sort, either of the people or the medical profession with regard to medical care.

We direct that a copy of this resolution be sent to the representatives and senators of the state of Kansas now serving in the United States Congress.

A motion by Dr. A. W. Fegtly, Wichita, providing for recognition of those who have practiced for 50 years, was seconded and carried without dissent. The motion follows:

There are many physicians and surgeons in Kansas who have practiced for over 50 years, many of whom are still in active practice. Some local societies and communities have recognized this faithful service publicly and with ceremonies. Several state societies have developed 50-Year Clubs and have honored these men at appropriate times during state meetings.

The Kansas Medical Society can and should give due recognition, honor and credit to these physicians of Kansas.

I move you that the Council be instructed to make appropriation for suitable certificates, gifts, or other mementos to be presented to physicians of Kansas who have passed their 50th year in practice, and that the Program Committee for the 1950 session and each succeeding session be instructed to arrange for public recognition of these physicians at a suitable time during the Kansas Medical Society session or at the annual banquet.

There followed a discussion as to whether or not alcoholic beverage advertisements should be accepted by the Editorial Board of the Journal. Dr. J. L. Latimore, Topeka, made a motion which was duly seconded that this matter be referred to the Council for action. This motion was lost upon the adoption of a substitute motion offered by Dr. J. F. Gsell, Wichita, that no liquor advertisements be accepted by the Journal and that the House of Delegates so in-

struct the Editorial Board. This motion was seconded and carried.

The president then opened a discussion of the Veterans Administration program. It was moved by Dr. L. S. Nelson, Salina, that the Society discontinue its contract with the Veterans Administration as quickly as the contract will allow and that this matter be carried over to the second meeting of the House of Delegates for final action. This motion was seconded and carried.

The president called on Dr. Franklin D. Murphy, Kansas City, dean of the University of Kansas School of Medicine, who spoke briefly about the problems at the medical center and the present lack of facilities.

The president announced the appointment of the following members of the Reference Committee: Dr. D. D. Vermillion, Goodland, chairman; Dr. J. M. Porter, Concordia; Dr. P. W. Morgan, Emporia; Dr. G. F. Gsell, Wichita; Dr. L. R. Pyle, Topeka.

The president announced that the second meeting of the House of Delegates would be held on Thursday, May 12, immediately after the close of the afternoon session. There being no further business, the meeting adjourned.

**Official Proceedings Second Session, House of Delegates
May 12, 1949**

The president, Dr. O. W. Davidson, Kansas City, called the meeting to order.

Dr. A. W. Fegty, Wichita, sergeant at arms, announced that 55 delegates and 17 officers, councilors and past presidents were in attendance, making a total of 72, sufficient for a quorum.

Dr. D. D. Vermillion, Goodland, chairman of the Reference Committee, reported that the committee recommended the adoption of the three resolutions presented by Dr. George Gsell, Wichita, chairman of the Committee on Emergency Medical Care. He moved that the resolutions be adopted, and the motion was seconded and carried unanimously. The resolutions follow:

Resolution Number I

WHEREAS, 3,800 physicians must volunteer for service with the armed forces prior to January 1, 1950, and 1,600 of these must join the forces prior to July 1, 1949, if a general physician draft is to be avoided; and

WHEREAS, the American Medical Association and the various state societies have offered to cooperate with the armed forces toward obtaining the required number of volunteer enlistments; and

WHEREAS, it is believed that a number of medical officers could be obtained from those who received their medical education at the expense of the government, through the A.S.T.P.

and V-12 programs, and who have not yet repaid the government by serving with the armed forces; now, therefore,

BE IT RESOLVED by the House of Delegates of the Kansas Medical Society that the president be directed to write each component county society within this state, listing the names of those physicians within the county who have received education in either the A.S.T.P. or the V-12 programs and who have not yet served with the armed forces, that a copy of this resolution be enclosed and that the president urge the county society to contact these men, requesting them to volunteer for a period of service with the armed forces.

BE IT FURTHER RESOLVED that the president of the Kansas Medical Society write a letter to each of the men in Kansas who has received training under the A.S.T.P. and the V-12 programs and who has not yet served with the armed forces, urging him to volunteer.

Resolution Number II

WHEREAS, there exist in the system of medical care, as practiced in the armed forces and in the Veterans Administration, certain factors that are contrary to the best standards of private medical care, as practiced in the United States, including the custom of admitting into the Veterans Administration hospitals many veterans for non-service-connected disabilities who are well able to pay for private medical care and the care for dependents of men in the service by medical officers; and

WHEREAS, socialism in all phases of national life, including health, could well result from these practices; and

WHEREAS, this situation can be corrected only if the Congress of the United States and the administrative staff of the armed forces are willing to direct such changes to be made, and

WHEREAS, the wishes of the various national service organizations are closely observed by the Congress; now, therefore

BE IT RESOLVED that the House of Delegates of the Kansas Medical Society take direct steps toward encouraging those members who are eligible to join the veterans' organizations and to take an active part in their affairs, toward the end that these service organizations may use their influence with the Congress to preserve for the people of this nation the present high quality system of private enterprise in medical care.

Resolution Number III

WHEREAS, in the event of a national emergency, involving conflict with a foreign power,

new methods of warfare will seriously endanger the lives of the civilian population; and

WHEREAS, medical care will immediately be needed in the event of a disaster; and

WHEREAS, the Governor of Kansas has appointed a state chairman of civilian defense; now, therefore

BE IT RESOLVED that the Kansas Medical Society prepare a civilian defense program relating to medical care.

BE IT FURTHER RESOLVED that the House of Delegates of the Kansas Medical Society direct the president to notify the Governor of Kansas that the Kansas Medical Society stands ready to serve his civilian defense committee in the event of an emergency occurring within this state.

Dr. Vermillion moved that the Blue Shield enrollment resolution be passed. The motion was seconded by Dr. J. L. Lattimore, Topeka, and carried. The resolution follows:

BE IT RESOLVED that the House of Delegates of the Kansas Medical Society recommend to the House of Delegates of the American Medical Association that approval be given the Commission of Associated Medical Care Plans (Blue Shield) to develop a national enrollment agency to include an insurance company legally qualified to write health and accident insurance and to act as an enrollment agency for local plans; that the new organization develop a strict contractual agreement at the top level with the corresponding organization now being formed by the Blue Cross Commission, for the purpose of presenting hospital insurance and sickness insurance as one package to national accounts and the public in areas not already served by non-profit plans sponsored by the medical profession.

Dr. Vermillion moved that the Blue Shield fee schedule resolution be passed. The motion was seconded by Dr. J. L. Lattimore and carried unanimously. The resolution follows:

RESOLVED that the House of Delegates respectfully request the Executive Committee of the Blue Shield to correct their present fee schedule in order to provide reasonable fees for non-surgical services.

Dr. A. W. Fegtly, Wichita, read an amendment to the constitution, one which was originally presented to the House of Delegates at the 1948 annual session. He moved that the amendment be adopted, Dr. L. F. Barney seconded the motion, and it carried unanimously. The amendment follows:

Article X, Section 4 of the Constitution shall be amended to read as follows: No person shall

be elected as an officer or councilor who is not in attendance at the annual session of his nomination, or who has not been a member of this Society for at least the two preceding years. In extremely unusual circumstances making the physical presence of a desirable or worthy officer or council member impossible at the session, this provision may be overruled by a three-fourths majority of the members voting on his election.

Dr. J. F. Gsell, Wichita, made a motion that the Kansas Medical Society not renew its contract with the Veterans Administration as of July 1, 1949. Dr. J. M. Porter, Concordia, offered the following motion: "I hereby move that in view of the changes in the Veterans Administration, the contract between the Kansas Medical Society and the Veterans Administration be allowed to lapse and that individual members of the Kansas Medical Society make contracts with the Veterans Administration to assure adequate care for any veteran in Kansas." The motion was seconded and carried.

Dr. A. J. Rettenmaier, Kansas City, moved that the House of Delegates recommend to the component societies of the Kansas Medical Society that the county officers be elected in the spring of the year and, where possible, take office with the beginning of the summer season. The motion was seconded by Dr. W. H. Algie, Kansas City, and carried unanimously.

Dr. J. T. Anderson, Leavenworth, requested that the Leavenworth County Medical Society be transferred from District 2 to District 1. Technical difficulties with reference to constitutional requirements arose which resulted in the tabling of this request.

The president asked for nominations from the floor for the office of president-elect. Dr. Hugh A. Hope, Hunter, nominated Dr. F. R. Croson, Clay Center. It was moved and seconded that nominations be closed and that the secretary cast a unanimous ballot for Dr. Croson for the office of president-elect. The motion carried. Dr. D. D. Vermillion, Goodland, secretary, declared a unanimous ballot cast for Dr. Croson.

The president announced that nominations were in order for the office of first vice president. Dr. F. L. Loveland, Topeka, nominated Dr. H. H. Jones, Winfield. It was moved by Dr. Hugh A. Hope, Hunter, that nominations be closed and that the secretary cast a unanimous ballot for Dr. Jones for the office of first vice president. The motion was seconded and carried. Dr. Vermillion cast a unanimous ballot for Dr. Jones.

The president asked for nominations for the position of second vice president. Dr. J. L. Lattimore, Topeka, nominated Dr. C. H. Benage, Pittsburg, and

moved that nominations be closed and that the secretary cast a unanimous ballot for Dr. Benage. Dr. J. F. Gsell, Wichita, seconded the motion and it carried unanimously. Dr. Vermillion, secretary, cast a unanimous ballot for Dr. Benage.

The president then called for nominations for the office of constitutional secretary. Dr. W. L. Anderson, Atchison, nominated Dr. D. D. Vermillion, Goodland. The nomination was seconded and the president cast a unanimous ballot for Dr. Vermillion.

Nominations for the office of treasurer were requested. Dr. J. L. Lattimore, Topeka, nominated Dr. L. L. Saylor, Topeka, and the nomination was seconded. Dr. A. W. Fegtly, Wichita, nominated Dr. J. L. Lattimore, Topeka, and Dr. L. F. Barney, Kansas City, seconded the nomination. It was moved and seconded that nominations cease, and upon a showing of hands Dr. Lattimore was elected.

The president asked for nominations for the position of delegate to the American Medical Association for the years 1950-1952, and the name of Dr. J. M. Porter, Concordia, was submitted. The nomination was seconded. A motion that nominations cease was seconded, and Dr. Vermillion cast a unanimous ballot for Dr. Porter.

The president requested reports from the seven councilor districts which elected councilors this year. The districts reported the selection of the following councilors:

District 2—Dr. A. J. Rettenmaier, Kansas City.

District 3—Dr. J. G. Hughbanks, Independence.

District 4—Dr. F. C. Taggart, Topeka.

District 6—Dr. J. V. Van Cleve, Wichita.

District 10—Dr. Murray C. Eddy, Hays.

District 12—Dr. R. G. Klein, Dodge City.

The appointment of a councilor for District 11 was referred to the Council.

Dr. L. F. Barney, Kansas City, moved that the House of Delegates instruct the central office to write the Shawnee County Medical Society and the Topeka Chamber of Commerce, thanking them for arranging and conducting an excellent meeting. The motion was seconded and carried unanimously.

The president asked Dr. L. R. Pyle to go forward and presented him with bound volumes of the Journal for the years during which he has served as editor.

The president announced that the new Council would hold its first meeting at the close of the House of Delegates meeting. At the conclusion of the session he presented Dr. Haddon Peck, St. Francis, and installed him as president of the Kansas Medical Society.

Report of Journal Editor

Your Editorial Board composed of Lucien R. Pyle, Dwight Lawson, Orville R. Clark, Richard

Greer and John Cavanaugh as editors, James B. Weaver and C. A. Hellwig as associate editors, with Miss Pauline Farrell as managing editor and Oliver Ebel as business manager, submit to you for your action the following report:

Your Editorial Board has met four times since the last report to this body. The routine business of the Journal was discussed. John Cavanaugh, Miss Farrell and Oliver Ebel represented the Journal of the Kansas Medical Society at the Conference of Editors and Secretaries held in St. Louis in November. Dr. Cavanaugh was the official representative of the Board. The Board unanimously voted to send Miss Farrell to the St. Louis meeting and to defray her expenses from Journal funds.

We are pleased to report to you that the quantity of scientific material submitted for publication has been greater during the past year than in any of the past 17 years that I have been associated with the Journal. The quality of scientific material is greatly improved. However, we still received some excellent scientific material that should be published but it is so poorly organized that we have returned these papers to the authors for editing and have requested that they be again submitted to the Board. We feel that it is not the scope of your Board to take on the task of grossly editing papers and returning the corrected copy to the author for approval. We obtain considerable copy with a letter to this effect: "I read this paper before such and such a medical meeting and it was requested that I submit it to the Journal for publication." I would like to emphasize this point: material organized for oral presentation at a medical meeting is oft times unsuitable for publication. If you give or hear scientific presentations that you think should be published, please organize it or ask the author to edit the paper before submitting it to the Board. We do not like to return manuscripts to the author for rewriting for two reasons: first, we do not wish to offend the author, and second, even though the material may be excellent, we probably will not get it back again.

We have over the past year increased the scope of the Journal somewhat. The Committee on Child Welfare has prepared copy each month for a page in the Journal. We have also added a section containing case reports from the University of Kansas Medical Center Clinical Pathological Conference. This excellent material has been prepared and edited by the members of the staff of the medical school. The Editorial Board feels that this is a valuable addition to the Journal and we are deeply indebted to those of our members who prepare this material each month.

Within the next few months, through the kindness and generosity of the Kansas Division of the

TREATMENT OF CONSTIPATION IN **mucous colitis**

"The treatment of the constipation in mucous colic does not differ from the treatment of uncomplicated constipation. It is, as always, of great importance to avoid irritating aperients, . . . The stools should be rendered soft and more bulky and therefore more easy to expel with . . . and unirritating vegetable mucilages."

—Hurst, A., in Portis, S. A.: *Diseases of the Digestive System*, ed. 2, Philadelphia, Lea & Febiger, 1944, p. 692.



MUCOUS COLITIS. In this x-ray is shown the distinctive string-like appearance of the descending portion of the lower bowel in mucous colitis, a condition frequently accompanying severe degrees of spastic or atonic colon. In the sagittal section is shown the over-secretion of mucus adhering to the bowel wall.



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American Cancer Society, we will publish a scientific supplement to the Journal containing the papers presented at the Cancer Conference which was held in Wichita in January. Since the Cancer Society hopes to make this an annual meeting, the Editorial Board anticipates having access to this material and publishing a cancer supplement each year.

The Journal is now in its 50th year of publication. It was the hope of the Editorial Board to start in Volume L, Number 1, a history of medicine in Kansas. However, we were unable to find an author. So we leave that for future business.

During the past fiscal year the Journal has been self-supporting. We wish to report to you that the Journal was one of four journals obtaining their national advertising from C.M.A.B. that had an increase in billing in 1948 over 1947. Our increase in billing for national advertising was 7.1.

In accordance with the changing times in Kansas, the Board is confronted with a new problem and respectfully requests your counsel and direction. Shall we accept advertising copy for liquor? If so, shall it be restricted to wines and ales or shall we go all the way and include hard liquor? As a matter of precedence, out of 34 state journals who obtain advertising copy through C.M.A.B., 13 do not accept liquor advertising, four accept wine and beer but no whiskey copy, one accepts beer but nothing stronger, and 11 accept all three.

Again I want to emphasize the fact that the Journal of the Kansas Medical Society belongs to you. Those of us who have been elected by the Council to direct its affairs desire to make it the kind of publication that you and all those that you represent want it to be. We want you to be proud of your Journal and we welcome your suggestions for improvement.

I cannot end this report without paying tribute to Miss Pauline Farrell, our managing editor. She has again been true to her trust. It is through her efforts that the Journal goes to press and the dead lines are met. Also Mr. Ebel, who among his countless duties and work, and from where I do not know, finds time to attend our Board meetings, to prepare copy, and to offer us counsel.

I wish to thank the other members of the Editorial Board for their interest and the time that they have spent in reading and evaluating scientific material and in reading proof.

And last, but not least, I want to thank our advertisers for their copy. After all, it is their support that makes the publication of the Journal possible. And I request that you as readers of the Journal patronize those firms that advertise in our Journal whenever possible.

Editorial Board Membership

Two members of the Editorial Board of the Journal of the Kansas Medical Society, Dr. Orville R. Clark and Dr. Richard Greer, both of Topeka, were re-appointed to three-year terms on the board at the annual session. They will serve during the coming year with Dr. Lucien R. Pyle, editor, Dr. John W. Cavanaugh and Dr. Dwight Lawson.

Kansas Physicians' Service Elects

The annual meeting of Kansas Physicians' Service was held at Topeka, May 9, 1949, and the following officers were elected to direct Blue Shield activities during the coming year: president, Dr. Conrad M. Barnes, Seneca; vice president, Dr. Warren F. Bernstorf, Winfield; executive vice president, Dr. Henry S. Blake; secretary-treasurer, Dr. Dwight Lawson, Topeka.

Serving on the Board of Directors are: Dr. Conrad M. Barnes, Seneca; Dr. John A. Holmes, Lawrence; Dr. C. H. Benage, Pittsburg; Dr. Henry S. Blake, Topeka; Dr. John L. Grove, Newton; Dr. Warren F. Bernstorf, Winfield; Dr. Hugh A. Hope, Hunter; Dr. E. M. Sutton, Salina; Dr. George D. Marshall, Colby; Dr. O. A. Hennerich, Hays; Dr. Athol Cochran, Pratt; Dr. M. F. Frederick, Hugoton; Dr. Haddon Peck, St. Francis; Dr. F. R. Croson, Clay Center; Mr. Holmes Meade, Topeka, and Mr. Martin F. Trued, Topeka. The two persons mentioned last in the list, lay members of the board, were appointed by the governor.

Kansas Medical Assistants' Society

The annual meeting of the Kansas Medical Assistants' Society was held at the Kansan Hotel, Topeka, May 8 and 9, with good attendance from all parts of the state. The following officers were installed for the 1949-1950 year: president, Faye Bullard, Hutchinson; president-elect, Bernice Asher, Lawrence; vice president, Maxine Williams, Kansas City; secretary, Olive Allmon, Hutchinson; treasurer, Donna Harrison, Wichita.

General Practitioners Meet

The Kansas Academy of General Practice, organized last November, held a business session during the Society's annual meeting and elected the following officers: president, Dr. L. B. Gloyne, Kansas City; president-elect, Dr. Charles White, Great Bend; treasurer, Dr. George Thorpe, Wichita; secretary, Dr. A. E. Harms, Kansas City. Dr. William M. Brewer, Hays, was named to the board of directors, and Dr. Darrell L. Evans, Manhattan, was chosen delegate to meetings of the American Academy of General Practice.

Dr. R. B. Robins, Camden, Arkansas, was guest

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CARBOHYDRATE	65 Gm.	NIACIN	6.8 mg.
CALCIUM	1.12 Gm.	VITAMIN C	30.0 mg.
PHOSPHORUS	0.94 Gm.	VITAMIN D	417 I.U.
IRON	12 mg.	COPPER	0.5 mg.

*Based on average reported values for milk.

Two kinds, Plain and Chocolate Flavored. Serving for serving, they are virtually identical in nutritional content.



speaker at the meeting. He stressed the aim of the academy, improving the quality of general practice, and pointed out that it is the only medical organization in which members are required to continue their education in order to retain membership. A minimum of 150 hours of postgraduate education every three years is required of all members.

Anesthesiologists Meet

A meeting of the Kansas Society of Anesthesiology was held at Topeka, May 11, and the following officers were elected: president, Dr. Paul H. Lorhan, Kansas City; vice president, Dr. Richard S. McKee, Leavenworth; secretary, Dr. Harwin Brown, Winfield; treasurer, Dr. Harold F. Spencer, Emporia; delegate to American Society of Anesthesiology, Dr. Lorhan; alternate, Dr. Floyd C. Taggart, Topeka.

The society plans quarterly meetings during the coming year, usually in conjunction with a county medical society meeting. Particular emphasis will be placed upon the general practitioner who is doing part time work in anesthesia. Since many communities in the state have need of the services of an anesthesiologist, not now available, the society is planning several activities to change that condition. By advertising postgraduate instruction in newer methods of anesthesiology, through correspondence with the secretaries of county units, they hope to interest young physicians in enrolling for such study. By establishing a central placement bureau, they hope to list communities desiring the services of a part time anesthetist and to direct those interested in postgraduate education in this specialty to the places nearest their homes where they may obtain such instruction.

A committee was appointed to meet with Blue Shield representatives to adjust fees for the administration of anesthetics by physician anesthetists.

Blue Shield Committee Organized

A Blue Shield Physician Relations Committee composed of 12 physicians, one from each of the councilor districts of the Kansas Medical Society, was recently organized and held its first meeting in Topeka during the Society's annual session. Each member of the committee was appointed by the councilor of his district.

The purposes of the committee are outlined as follows: (1) To serve as an advisory group to the Blue Shield Board of Trustees. (2) To serve as a channel of communications so that physicians in all areas of the state may have more voice in determining the future course of the Blue Shield program. (3) To serve as a source of correct information in each district to the end that a better understanding of Blue Shield may be achieved by physicians.

The program will be carried out through the organization of district committees, made up of representatives of county societies in each district. Through this medium physicians throughout the state will have more voice and participation in the development of the Blue Shield program.

Dr. L. W. Reynolds of Hays, representing District 10, will serve as chairman of the Physicians Relations Committee. Other members are: District 1, Dr. John L. Mothershead, Denton; District 2, Dr. W. L. Pratt, Leavenworth; District 3, Dr. C. H. Benage, Pittsburg; District 4, Dr. Harold F. Spencer, Emporia; District 5, Dr. G. E. Paine, Hutchinson; District 6, Dr. G. G. Whitley, Douglass; District 7, Dr. Donald A. Bitzer, Washington; District 8, Dr. C. V. Minnick, Junction City; District 9, Dr. Floyd L. Smith, Colby; District 11, Dr. Justin A. Blount, Larned; District 12, Dr. R. G. Klein, Dodge City.

Radiological Society Meets

A meeting of the Kansas Radiological Society was held at the Hotel Kansan, Topeka, on May 11. Since there are no officers, members of the Board of Governors, Dr. Leland F. Glaser of Hutchinson, Dr. Harold H. Woods of Topeka, and Dr. Anthony F. Rossitto of Wichita, direct the society.

At its business session the group considered scientific exhibits, inclusion of radiation therapy in the Blue Shield program, the practice of medicine by hospitals in some states, and the matter of fixed rate salary arrangements between hospitals and radiologists.

An exhibit on chest lesions at the 90th annual session of the Kansas Medical Society was prepared by the radiological group, and it was voted that the exhibit be expanded for showing at the Southwest Clinical Society meeting in Kansas City in October.

A committee was appointed to meet with officers of Kansas Physicians' Service to plan for including radiation therapy in the Kansas Blue Shield program.

To avoid difficulties which have arisen in other states, the group went on record with a resolution that the House of Delegates of the American Medical Association be instructed to withhold approval for internes and residents in hospitals exploiting professional medical services, in an attempt to force hospitals to stop such practices, especially concerning radiologists.

The group disapproved fixed rate salary arrangements between hospitals and radiologists and approved contract arrangements, as recommended by the American Board of Radiology.

There are now 19 members in the society. Membership requirements are those outlined by the Radiological Society of North America. Complete in-



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Kansas Society of Pathologists

The Kansas Society of Pathologists, organized during the past winter, held a meeting in Topeka during the annual session of the Kansas Medical Society. The following officers were elected: president, Dr. W. W. Summerville, Kansas City; vice president, Dr. L. C. Murphy, Wichita; secretary-treasurer, Dr. A. A. Fink, Topeka.

All pathologists in the state of Kansas are eligible for membership. Since the organization is small, it is felt that benefit can be derived by combined meetings with other groups, and plans have been made for a meeting in September with pathologists from Oklahoma. A joint meeting with pathologists from the western division of Missouri was held successfully in April.

Eye, Ear, Nose and Throat Section

A meeting of the Eye, Ear, Nose and Throat Section of the Kansas Medical Society was held at Topeka May 9-12, 1949. Officers were elected as follows: president, Dr. N. L. Francis, Wichita; president-elect, Dr. Maurice J. Ryan, Kansas City; secretary-treasurer, Dr. W. D. Pitman, Pratt.

Participate in Sports Events

In spite of rainy weather many physicians took part in golf and trapshooting events at the 90th annual session on Monday, May 9. Dr. W. K. Hobart, Topeka, paced the golf tournament at the Topeka Country Club with a 77, six over par, and Dr. W. A. Smiley, Junction City, scored 89 of 100 to win the trap shoot at the Topeka Gun Club. Prizes were awarded at a tournament banquet that evening at the country club.

Other prize winners in the golf tournament were Dr. Ed Ashley, Chanute, 80, and Dr. Glen Ashley, Chanute, 81. Low net winner for the day was Dr. E. E. Harvey, Salina, with a 64, closely followed by Dr. W. F. Dreyer, Independence, 65. Additional prizes were won by Dr. J. L. Lattimore, Topeka; Dr. E. S. Edgerton, Wichita; Dr. R. P. Norris, Wichita; Dr. J. W. Shaw, Wichita; Dr. C. W. Miller, Wichita; Dr. A. P. Cloyes, El Dorado; Dr. R. A. West, Wichita; Dr. J. A. McLaughlin, Wichita; Dr. J. C. Joslin, Harper, and Dr. George Marshall, Colby.

Three physicians tied for second place in the trap shoot, Dr. Ed Smiley, Junction City; Dr. William Brown, Paola, and Dr. F. L. Loveland, Topeka. Also awarded prizes were: Dr. Arnold Baum, Stockton; Dr. F. R. Croson, Clay Center; Dr. Ben Brunner, Wamego; Dr. J. L. Mothershead, Denton; Dr. C. V.

Minnick, Junction City; Dr. F. C. Boggs, Topeka, and Dr. J. D. Bowen, Topeka.

Prizes for the various events were donated by the following: Riggs Optical Company, Schering Corporation, Lanteen Medical Laboratories, Inc., Ciba Pharmaceutical Products, W. H. Schlatter and Company, C. R. Tyler Agency, Van Pelt and Brown, Inc., Sharpe and Dohme, H. J. Heinz Company, Munns Medical Supply Company, Inc., Meyers Professional Pharmacy, Raish Drug Company, Doho Chemical Corporation, E. R. Squibb and Sons, and Mead Johnson and Company.

New Air Force Medical Service

Organization of the United States Air Force Medical Service within the Department of the Air Force has been announced by General Hoyt S. Vandenberg, Air Force Chief of Staff. Major General Malcolm C. Grow, surgeon general of the air force, who heads the medical service, will report directly to General Vandenberg.

Highlight of the plan for the service is the provision assuring career opportunities for personnel. Housing for medical officers and their families, stability of assignment and opportunities for medical and scientific advancement are features of the plan.

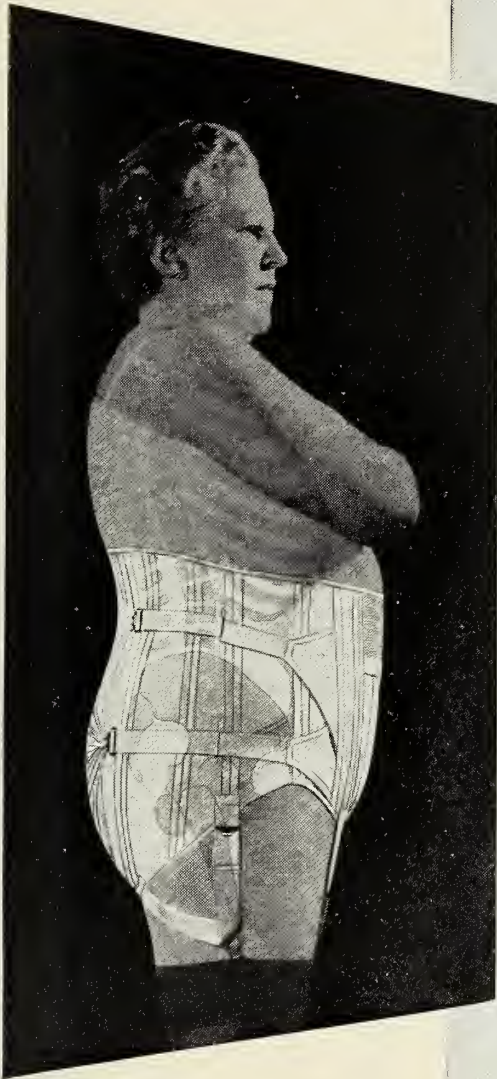
"Medical specialists are assured of opportunities for advanced training in both clinical medicine and research in aviation medicine. Professional facilities of general hospitals and laboratories, approved civilian institutions and air force facilities will be used to provide regularly spaced training tours for members of the air force medical service," the announcement stated.

The plans are designed to correct major objections of professional people to a career in the armed forces. Medical officers will be given every opportunity to pursue their specialties and doctors and dentists who volunteer to serve for more than one year will continue to receive the extra \$100 a month. Officers, nurses, and enlisted technicians who qualify and are assigned flying duties will receive additional hazard pay.

The service will be manned by both regular and reserve officers, reserve officers having the prerogative of serving limited periods of active duty. Civilians desiring regular or reserve commissions may apply directly to the surgeon general, U. S. Air Force, Pentagon, Washington.

Recognition of prior professional training and previous military service will be given in original appointments. Regular and reserve officers who have had duty with the army air force may apply to the surgeon general for transfer to the new air force medical service before July 26.

WHEN OBESITY IS A PROBLEM



Clinicians have long noted that the forward bulk of the heavy abdomen with its fat-laden wall moves the center of gravity forward. As the patient tries to balance the load, the lumbar and cervical curves of the spine are increased, the head is carried forward and the shoulders become rounded. Often there is associated visceroptosis. Camp Supports have a long history among clinicians for their efficacy in supporting the pendulous abdomen. The highly specialized designs and the unique Camp system of controlled adjustment help steady the pelvis and hold the viscera upward and backward. There is no constriction of the abdomen, and effective support is given to the spine. Physicians may rely on the Camp-trained fitter for precise execution of all instructions.

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Report From The Kansas University Medical Center Clinical Pathological Conference

Edited by Glen R. Shepherd, M.D., and Mahlon H. Delp, M.D.

Case Summary

The patient was a 70-year-old extremely black male admitted with the chief complaints of draining sinuses around the genitalia and extreme weakness.

In 1943, the patient had a rather poorly described lesion in the scrotum treated by orchiectomy. This was of an inflammatory nature but a report of pathology was not obtainable. Since that time draining sinuses persisted in the scrotum, and in the course of the remaining spermatic cord. Abscesses intermittently appeared in the perineum. For the past six months he had been very weak and occasionally fainted. He was referred to this hospital for complete examination.

Past history revealed a luetic infection in youth, treated with 20 "shots." It was noted in the family history that one brother with whom he lived had active pulmonary tuberculosis. The last contact with this brother was 20 years ago.

System review brought out a considerable weight loss, amount unknown; nausea and vomiting for one week prior to admission, with vomiting of red blood on one occasion; poor appetite and occasional bouts of diarrhea for the past three years; occasional shortness of breath on exertion but no cough or expectoration; and stumbling while walking in the dark and climbing stairs. He attributed most of the difficulty in walking to weakness.

Physical examination showed a powerfully built, well nourished colored male appearing chronically ill. BP 110/90; pulse 76. The remainder of the examination was normal with exception of genitourinary findings. The right epididymus was enlarged and nodular without skin fixation; the right spermatic cord was indurated but not beaded; the left testicle was absent; there were draining sinuses in the left side of the scrotum and over the mid-portion of the right spermatic cord. The prostate was Grade II enlarged, but smooth and benign in character. Seminal vesicles were not felt.

Laboratory findings: urinalysis—acid, 1.032, faint trace of albumin, pus cells 300 per cc.; stain showed short fat rods singly and in chains. CBC normal. Serology negative. NPN 52.5, creatine 1.2, sugar 76, cholesterol 193. Smears from draining sinuses in urine revealed no acid-fast organisms. Inoculation of material from draining sinuses into guinea pig was not done. Urine culture grew hemostaphylococci and *Ps. Aeruginosa*.

Chest x-ray showed a heart within normal limits in size, but hypertensive in contour. The lungs ap-

peared normal. A plate of the K.U.B. tract showed only early osteoarthritis of the spine.

EKG showed sinus tachycardia, general diffuse depression of EMF, levorotation.

During his course in the hospital the patient was endoscoped and found to have trabeculation of the bladder and an obstructing prostate. Mucosa of the bladder was diffusely inflamed, suggesting a tuberculous process. The bladder was otherwise normal. In view of these findings, it was decided to do excretory pyelograms rather than risk retrograde visualization. Following endoscopy, the patient became rapidly weaker and hypotensive. No specific physical signs of localized disease were found. The blood chlorides fell to 360, but were elevated to 480 with saline infusions. He subsequently developed generalized vasomotor collapse, profound shock with tachycardia, and a high fever, and died in spite of treatment. Desoxycorticosterone was given.

Dr. Delp (chairman): In answer to the questions, there was no change in the patient's color for his wife said he was always quite dark. No lymphadenopathy was present. The x-ray films were of little aid in making a diagnosis. They did serve to rule out pulmonary tuberculosis. May we have Mr. Miller's comments now?

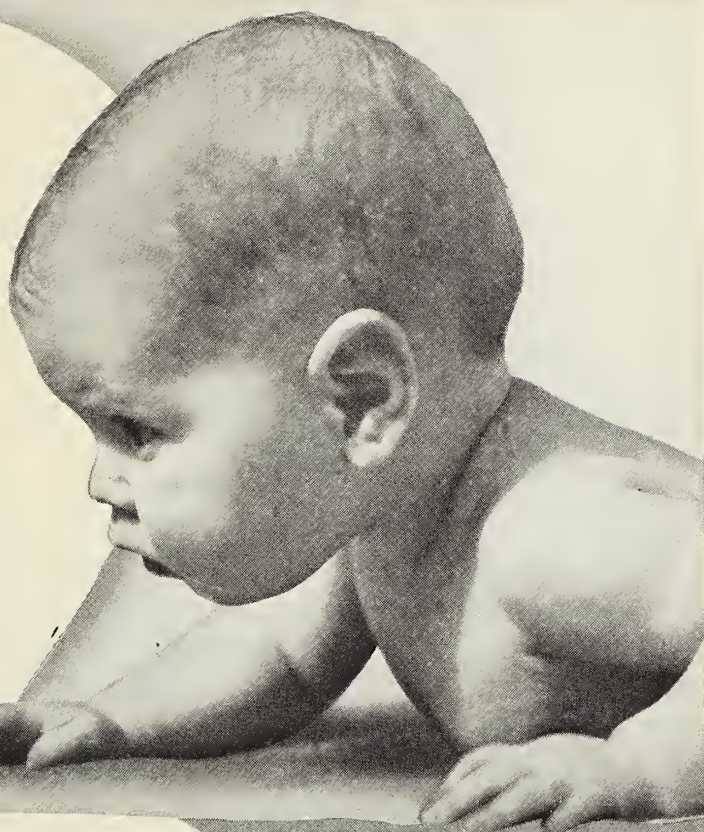
Differential Diagnosis

Mr. Miller (medical student): In this case, I was wondering about the nature of the sinuses this fellow had, his persistent syncope, persistent weakness, and the undeterred collapse he had. The history would indicate that there was something wrong with one testicle. It had been removed. Draining sinuses later, indicate an infectious process. I thought of tuberculosis of the epididymis with involvement of the tissue around the scrotum. The right epididymis was mentioned as being indurated and nodular.

The diagnosis that I have in mind is Addison's disease, since tuberculosis of the adrenal gland is often the cause of Addison's disease. The clinical picture is quite consistent with the picture that is often seen in Addison's disease; weakness, exertional dyspnea, poor appetite and bouts of diarrhea, although gastrointestinal symptoms are not marked here. Usually patients with Addison's disease have more nausea and distress in the abdomen after meals. Usually they have an anemia which is not present in this case. His blood chlorides were considerably diminished. In adrenocortical insufficiency, the excretion of chlorides increases together with a greater

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retention of potassium. The increased potassium tends to diminish the tone of the heart and accounts for some of the cardiac disease, hypotension, and the tendency to go into crises.

Another diagnosis that I considered was the Stokes-Adams syndrome which could account for some of his syncope. However, his pulse was 76 and his electrocardiogram showed no heart block. So, I think Stokes-Adams syndrome not applicable.

Pernicious anemia might be considered, except for his normal blood picture without liver treatment and the absence of neurological signs typical of pernicious anemia. Stumbling and difficulty in climbing stairs might indicate a subacute combined degeneration of the cord. The protocol indicates this was due to his weakness, and I think that reasonable.

A testicular tumor that had metastasized to some region of the central nervous system causes a rather bizarre picture of weakness and syncope. The absence of a palpable mass anywhere, the absence of chest findings, and lymphadenopathy tend to rule this out.

Hemochromatosis would explain the increased pigmentation, if it were increased, but other suggestive findings of hemochromatosis are absent. My final diagnosis is Addison's disease.

Dr. Delp: Your complete diagnosis, is then, what?

Mr. Miller: Tuberculosis of the adrenal glands with adrenal insufficiency.

Dr. Delp: You make that diagnosis with confidence. Do you have an explanation for the disturbances resulting in the low blood sodium?

Mr. Miller: The retention of chlorides is dimin-

ished. For some reason that I don't understand the chlorides are not readily absorbed from the tubules.

Dr. Delp: Do you think Addison's disease is a common disease in colored people, Mr. Miller?

Mr. Miller: I don't think it is a common disease in any race of people, but I don't know its relative frequency in Negroes.

Dr. Delp: Thank you.

Clinical Discussion

Dr. Valk (urologist): It seems that this patient must have had tuberculosis contact earlier, leading to a tuberculous bacteriemia and a possible tuberculous nephritis with retrograde infection of the genitalia. It seems logical to assume that the adrenal glands could be bilaterally involved. Possibly acid-fast bacilli were not demonstrated because of treatment with streptomycin.

The fact that this patient was well until a minor surgical procedure was done is worthy of comment. The tuberculosis, of the adrenal cortex was considered possible upon the basis of hypotension, muscular weakness, low blood sugar, and hypochloremia.

Our diagnosis was bilateral pyelonephritis, obstructive disease (on the basis of the NPN and trabeculations), and tuberculosis of the adrenal cortex.

Dr. Delp: Dr. Allen, the diagnosis seems to be quite obvious in the minds of the first two speakers. Do you have any criticisms or comments about the diagnosis? What was your opinion of this case?

Dr. Allen (internist): The diagnosis of chronic adrenal insufficiency in the white person is perhaps not too difficult when the full blown picture is present. That is, pigmentation of the skin and mucous membranes, hypotension, weakness, and the rather classical blood chemical findings. It has been pointed out by several men at Michigan that prior to 1942, there were only 20 cases of Addison's disease in Negroes reported in the American literature, or perhaps the literature of the world. They thought this was due to several factors. First, Addison's disease is not an obvious diagnosis in a colored person because you lose the opportunity of suspecting it when characteristic skin pigmentation is obscured. Secondly, the lack of cases may be simply a lack of interest in reporting cases of Addison's disease in colored people. These observers felt that the incidence of Addison's disease in colored people was probably no different by and large than it was in white people, or perhaps very slightly greater in Negroes due to the frequency of tuberculosis in colored people.

For chronic adrenal insufficiency, several methods of approaching the diagnosis have been devised. One of the first, reported by Harrop in 1933, consists of withholding chlorides from a patient for two or

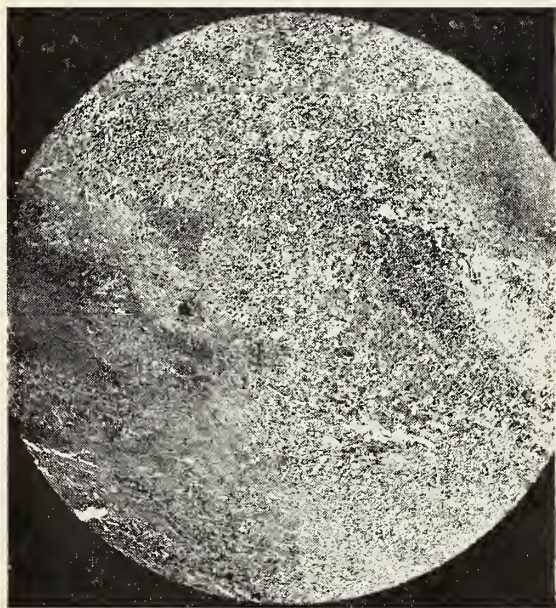


Figure 1. Photomicrograph of adrenal gland. Tissue showing extensive destruction of the adrenal with giant cells of tuberculosis inflammatory reaction.

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three days and thus precipitating an acute episode of adrenal insufficiency. That, however, involves some danger to the patient and several deaths have been reported from such a procedure. Later, in 1936, Zwemer and Truszkowski reported the potassium tolerance test. Perhaps a better test is that reported by Robinson, Power, and Kepler which involves the quantity of urine output in a patient receiving normal amounts of chloride together with measurement of the sodium and chloride in the urine. Addisonians excrete the excess water much slower than normal and tend to excrete sodium and chloride in larger amounts.

Evaluation of any one of these tests is difficult. Certainly the water test's chief disadvantage is that in early, mild, or chronic insufficiency the diagnosis may be missed. There will probably be more false negative tests than false positive tests in the various retention tests. The determination of 17-ketosteroids in the urine is of some value although their excretion is altered by a number of things other than chronic adrenal insufficiency. In acute crises the diagnosis is not too difficult if careful attention is paid to blood chemical disturbances.

Dr. Delp: The clinicians seem agreed on the diagnosis of Addison's disease. Dr. Statland also made a diagnosis of adrenal insufficiency due to tuberculosis in this case. Urology and medicine agree.

Pathological Report

Dr. Pebley (gross pathology): No evidence of increased weight loss except for some decrease in the periorbital tissues was noted.

There was no unusual lymphadenopathy except for mild nodularity in both inguinal regions.

The left testicle was absent, a draining sinus approximately $1\frac{1}{2}$ cm. in diameter and a ragged necrotic border were noted on the lateral aspect of the left side of the scrotum.

There was no more than 20 cc. fluid in both pleural cavities. Excessive calcified hilar nodes were present along the right side of the hilum.

Heart weight was 250 grams. It was flabby, with numerous petechiae of the epicardium and myocardium.

The only evidence of lues was found in the aorta.

The right adrenal gland weighed 12 grams with distortion of the whole gland and replacement by nodules of firm non-caseous granular material. In various areas the medulla appeared to be still present but no cortex was detected. The left adrenal weighed three grams. The cortex and medulla were present in most of the gland but at one end there was considerable cellular infiltration similar to that in the right.

The kidneys didn't appear abnormal. There was no evidence of pyelonephritis.

No reason was found for the clinically noted obstruction to urinary flow.

The right epididymus was large and fibrous. The right testicle showed caseation necrosis.

Examination of the scrotum revealed a sinus opening on left anterolateral aspect with a small amount of reddish brown discharge.

The left spermatic cord terminated in the sinus opening.

The brain showed nothing unusual except in the right lobe of the cerebellum the meninges were adherent to the floor of the brain over a small area.

The gross diagnosis is old syphilis, old tuberculosis, possibly primary in the hilar lymph nodes with secondary invasion of the adrenals and the genitourinary system. The heart was dilated terminally.

Dr. Boley (microscopic pathology): Microscopic findings confirm the gross diagnosis. The cause of death was myocardial failure. Sections through the peribronchial lymph nodes show no active process present. The adrenals show small foci of cortical tissues remaining; however, the greater part is replaced by caseation necrosis and fibrosis. Very little adrenal cortical tissue remains in either adrenal. From the microscopic findings, though, it is very difficult to tell the extent of the Addison's disease. The vas deferens through the left cord shows a lumen filled with caseous necrotic material and granulation tissue of a tuberculous type. In the right testicle, the location of the caseous necrotic mass was around the right testicle—producing pressure on the testicle causing atrophy. Sections of the bladder show very little infiltration into the submucosa. A diagnosis of tuberculosis of the bladder or of the prostate cannot be made. In the kidney there is noted little change other than swelling of Bowman's capsule, indicating acute glomerulitis.

Following is a slide of the incidence of various cases of tuberculous adrenal insufficiency and primary cortical atrophy since its first description:

	<i>Tbc adrenal insuff.</i>	<i>Pri. Cort. Atrophy</i>
Addison.....	original cases	1
Guttman.....	review 566 cases	65
Duffin.....	U. of Toronto	7
Friedman.....	Army Anat. Path. (to 1941)	6
	" (1941-46)	15

This means that we are now finding more cortical atrophy. Perhaps, more of these cases are being reported and fewer of those due to a tuberculous process are being reported, giving a presently distorted figure. Tuberculosis of the adrenal occurs two to three times more often in males than in females. Cortical atrophy, on the other hand, is more common in females than males.

Dr. Wahl (professor of pathology): We have here a very good example of secondary tuberculosis with the primary lesion healed. We have not dem-

50 and 2

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onstrated any acid-fast organisms. The active lesion is in the adrenal glands. Addison's disease is not a common one. Out of 15,000 autopsies done at this institution, we have probably no more than four cases of Addison's disease. Addison's disease is a clinical diagnosis—not a pathological one. Presence of tubercles in the adrenal does not mean Addison's disease. We have seen adrenals almost completely destroyed by tumor, usually secondary, which have presented no symptoms of adrenal insufficiency. We do not know how to explain this.

Clinical Discussion

Dr. Delp: Dr. Sirridge, as an endocrinologist, would you discuss the treatment of adrenal crisis?

Dr. Sirridge: The crisis of Addison's disease is one of the most urgent emergencies in medicine. I know of none where attention to all the little factors is so important as in the treatment of Addisonian crises. The routine which we use has been checked rather carefully and has been modified over the last few years. At the present it is about like this.

The patient should be in a single room and kept warm and comfortable. Although the temperature is usually subnormal in Addison's disease, in crises it may be high with or without the presence of infection. The patient should be examined as little as is necessary to establish the clinical diagnosis and the obvious site of the infection if one is present. After the physical examination, treatment must be started. It must be prompt, accurate, and thorough.

Characteristic laboratory findings, as you all know, are a low blood sugar, the urea and NPN are high due to retention, with hypochloremia and hyperpotassiumemia.

If the patient is comatose, two drugs may be used: adrenal cortical extract, which is the most important, and desoxycorticosterone acetate. Adrenal cortical extract is the gross extract including all the materials, presumably, manufactured or excreted by the adrenal cortex. It is sold under such names as Adrenal Cortical Extract, and Eschatin. Desoxycorticosterone acetate is pure and is cheap in comparison to adrenal cortex extract which is very expensive. However, desoxycorticosterone acetate is not as important in crises.

If the patient is unconscious, or semicomatose, adrenal cortical extract should be given immediately intravenously. Suppose you have already drawn enough blood for the CBC, the sedimentation rate, and the hematocrit which is used only as an index of hydration. Ten cubic centimeters adrenal cortical extract should be given intravenously. If the patient is not awake it should be continued intravenously until at least 25 cc. are given. It can be given rapidly. I have never experienced ill effects nor seen

a reaction in its administration. Depending upon the condition of the patient, you may wish to give the 25 cc. of cortical extract in the form of an infusion. In any event, an infusion must be used early in the treatment, consisting of 1000 cc. normal saline with two or three per cent glucose. You should give it intravenously within the hour. Pour it in rapidly. The heart, as has been described, is small and flabby and it will expand.

Immediately following this, the patient should probably be given penicillin or some other antibiotic empirically.

The purpose of the glucose in the solution is to avoid the hypoglycemia which occurs in a good proportion of the patients in Addison's disease. I have seen patients treated in crisis and two days later die in hypoglycemia.

The adrenal cortical extract should be continued, giving perhaps 10 cc. intramuscularly every hour until the patient is definitely out of danger. This will require 200 to 300 cc. in 24 hours. I have seen as much as 490 cc. given in 24 hours and about 1500 cc. in the next week. The patient is now living and well.

Desoxycorticosterone acetate helps maintain the mineral elements, particularly the potassium. It is a powerful drug and should be given in small doses. The dose should be about one milligram twice a day. Excess of this drug may kill the patient through hypopotassiumemia. In no case should desoxycorticosterone acetate ever be given in doses larger than 10 milligrams a day.

When the patient is improved enough to take food by mouth, give a high carbohydrate, high protein diet with salt given by enteric coated tablets rather than adding it to the food. Remember, the patient already has an anorexia, vomiting, possibly diarrhea, and if you add too much salt to the food it will decrease intake. Salt dosage should be six to 12 grams per day.

Essentially the treatment of crisis is long on the adrenal cortical extract, very little on the desoxycorticosterone acetate, sodium chloride intravenously, sugar by infusion. Careful attention to blood sugar values throughout the critical period is necessary. At no time should the patient be given up in Addisonian crisis. So long as alive adrenal cortical extract should be used and treatment continued vigorously. Regardless of the condition of the patient when first seen, treat accurately, promptly, and thoroughly. Hours make a lot of difference.

Dr. Delp: Dr. Weber, do you have any comments to make about the various chemical diagnostic procedures that Dr. Allen outlined for us?

Dr. Weber (clinical pathologist): The test which is probably best is the Kepler-Wilson test. Night



Further evidence of the safety of 'Benedrine' Sulfate therapy

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1. New York State J. Med. 47:1003

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urine is collected, a certain amount of water is given to the patient, and urine collected hourly in the morning. It is not a diagnostic test so much as an exclusion test. If the volume of any one of the morning samples is in excess of the total evening specimen, the patient presumably does not have Addison's disease. As Dr. Sirridge has indicated, the adrenal does not secrete any one single hormone, but many. This Addisonian crisis probably followed after the cystoscopic examination. When was the blood chloride drawn?

Dr. Mitchell: The blood chlorides were drawn after the cystoscopy.

Student: Did the EKG's mirror the high potassium one would expect in this case?

Dr. Delp: Perhaps Dr. Cochran will say a few words about that.

Dr. Cochran (cardiologist): The EKG does not fit the picture of a high potassium level. Probably the time element was wrong, that is, the EKG was taken when hyperpotassemia was not yet present.

Summary

We learn from this case that Addison's disease is not commonly recognized in colored patients although no proof of its rarity in this group exists. We further learn that a high index of suspicion is a prerequisite to good diagnosis. The several tests of adrenal functions are valueless unless applied. Atrophy of the adrenal gland is now more frequently encountered as the cause of failure than is tuberculosis.

Addisonian crisis is a potential danger even under such minor stresses as a cystoscopic examination. It has been emphasized that after recognition of acute adrenal insufficiency prompt and vigorous therapy is required if recovery is to result.

ACTIVITIES OF MEMBERS

Dr. O. W. Davidson of Kansas City, immediate past president of the Kansas Medical Society, Dr. Earl Mills of Wichita and Dr. T. L. Foster of Halstead were recently named by Governor Frank Carlson as members of a new advisory commission on state institutions. The commission, with Dr. Davidson as chairman, will direct management of state charitable institutions, industrial schools and the tuberculosis sanitarium.

* * *

Dr. James Mott, Lawrence, took office last month as president of the Kansas Public Health Association. Dr. Vernon M. Winkle, Kansas City, was named president-elect of the group.

* * *

Dr. Albert C. Hatcher, who has been specializing

in obstetrics, gynecology and abdominal surgery at the Mayo Clinic during the past three years, has returned to Kansas to resume practice at the Hatcher Clinic and Hospital in Wellington.

* * *

Dr. A. C. Gulick, who has been practicing in Goodland since 1900, was honored recently when the city council of Goodland named a new park "Gulick Park."

* * *

Dr. M. E. Robinson, Goodland, was guest speaker at a refresher course on cancer given recently at Colorado Springs by the El Paso, Colorado, County Medical Society.

* * *

Dr. J. F. Hassig, who recently completed 50 years in the practice of medicine in Kansas City, was guest of honor at a dinner at St. Margaret's Hospital, Kansas City, on May 19.

* * *

Dr. J. G. Hugbanks, Independence, spoke on socialized medicine at a meeting of the Kiwanis Club there last month.

* * *

Dr. Harold L. Graber, who has been practicing in Nickerson, has joined the staff of the Gage-Hall clinic in Hutchinson. He will retain his office in Nickerson for evening appointments until a resident physician is secured there.

* * *

Dr. Haddon Peck, president of the Kansas Medical Society, addressed 250 delegates of the Kansas State Federation of Labor during its convention in Topeka on May 13.

* * *

Dr. J. A. McLaughlin of Wichita, who practiced for many years in Greensburg, was honored at a community celebration in Greensburg on April 24. The occasion was planned to commemorate his 50th anniversary in the practice of medicine.

* * *

Dr. C. Henry Murphy, health officer for Sedgwick County, became assistant health officer of the city of Wichita, May 1, a step in the merger of the city and county health departments. Dr. Murphy has given up his private practice.

* * *

Dr. Carl Smith, who has been practicing in Sedan since 1937, and his brother, Dr. Kenneth Smith, who located in Sedan last December, have established a small diagnostic clinic there with new space providing rooms for examination, treatment, x-ray work and laboratory procedures.

* * *

Dr. Lyle Wonderlich, who has been practicing in Osborne, has joined the staff of the St. Joseph Hos-



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pital in Concordia and will specialize in anesthesiology there.

* * *

The Mulvane Chamber of Commerce and Mulvane Civic Club were joint hosts at a community celebration on April 26 honoring Dr. Leslie H. Cobb, who opened an office there last fall.

* * *

Dr. Richard S. McKee, Leavenworth, was named coroner of Leavenworth County last month.

* * *

Dr. Clarence H. Steele, Kansas City, was guest speaker at a meeting of the staff of the Community Hospital, Beloit, recently. He discussed "Bronchoscopy in Relation to Pulmonary Disease."

* * *

Two physicians recently moved to Hays to establish practice there. Dr. Henry M. Foster, formerly of Fort George C. Meade, Maryland, will specialize in obstetrics and pediatrics as a member of the staff of the Eddy Clinic. Dr. A. M. Cherner, who will specialize in radiology at the two Hays hospitals and at the Eddy Clinic, formerly practiced in Grands Rapids, Michigan.

* * *

Dr. Robert N. Shears, who recently finished a residency in pediatrics at St. Joseph's Hospital, Kansas City, Missouri, is now practicing in Hutchinson in association with Dr. R. Y. Jones and Dr. Robert Fernie.

* * *

Dr. Clyde W. Miller, Wichita, was recently appointed a member of the Committee on Members and Credentials of the American Academy of General Practice.

* * *

Dr. H. B. Ivy, first resident physician at Sunflower Village, left there June 1 to enroll for postgraduate work at Tulane University, New Orleans. Next year he will begin a three-year residency in ophthalmology at Henry Ford Hospital, Detroit, Michigan. Dr. Hiram H. Avery, formerly of Omaha, is taking over Dr. Ivy's practice in Sunflower Village.

* * *

Dr. William Brownlee has completed a two-year tour of duty with the United States Army in Europe and upon his release from the service will be associated in practice with his father, Dr. J. J. Brownlee, in Hutchinson.

* * *

Dr. R. C. Polson, Great Bend, has been named city health officer.

* * *

Dr. A. E. Hiebert, Wichita, recently became a diplomate of the American Board of Plastic Surgery.

COUNTY SOCIETIES

The second meeting of the newly organized Midwest Kansas Medical Society was held in Pratt, April 20. Dr. Charles Dennie, Kansas City, spoke on reactions from the use of penicillin and antibiotics in the treatment of skin diseases, and Dr. L. K. Chont, Winfield, discussed pathology and bone tumors. It was decided that the next meeting of the group will be held in Hutchinson.

* * *

The Leavenworth County Medical Society met April 11. Dr. Clarence Erickson, Pittsburg, spoke on "Treatment of Common Cardiac Conditions."

* * *

The Marshall County Medical Society held a joint meeting with the Auxiliary on May 5 at Marysville. Dr. D. N. Medearis, Kansas City, presented a scientific paper and Dr. Conrad M. Barnes, Seneca, discussed rural health.

DEATH NOTICES

WILLIAM AUGUST KLINGBERG, M.D.

Dr. W. A. Klingberg, 74, an active member of the Dickinson County Medical Society, died in his office at Hope May 10. He was graduated from Rush Medical College in 1901 and later that year began practice at Elmo, later moving his office to Hope, although he continued to serve the Elmo community.

* * *

THOMAS CLARK HINKLE, M.D.

Dr. T. C. Hinkle, 73, physician, minister and author, died at his home in Onaga May 13. He was graduated from the Kansas Medical College, Topeka, in 1904 and later was ordained a minister. During his years of practice, 25 at Baldwin, he also became interested in writing and was the author of 30 dog and horse stories for young people which found a wide audience among adults as well as children. He was an honorary member of the Pottawatomie County Medical Society. He was serving as a minister of the Congregational Church at the time of his death.

* * *

PAUL EDGAR CONRAD, M.D.

Dr. Paul E. Conrad, 54, Hiawatha, an active member of the Brown County Medical Society, was killed May 20 in an airplane crash which also took the lives of four other Hiawatha residents. After his graduation from the University of Nebraska College of Medicine, Omaha, in 1924, he came to Kansas to practice and was active in medical activities in Brown County.

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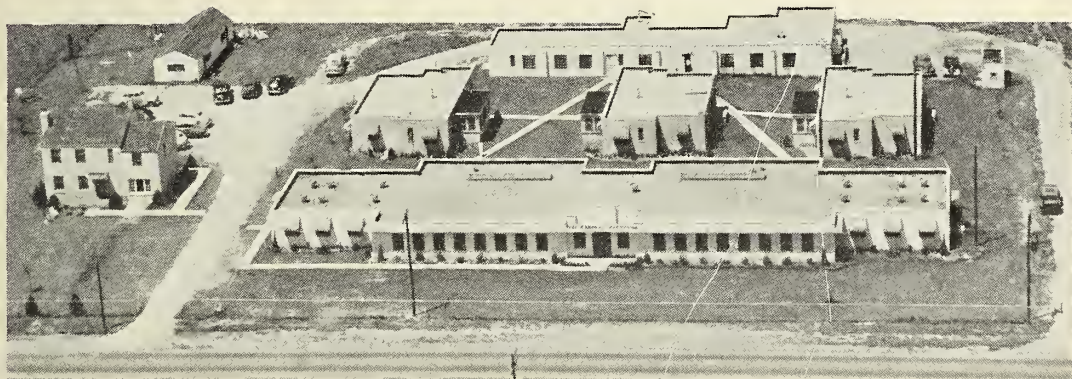
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The Tri-County Medical Society, Cowley and Sumner Counties in Kansas and Kay County in Oklahoma, met April 14 in Wellington. At the business session the following officers were elected: president, Dr. L. G. Neal, Ponca City; vice president, Dr. W. G. Weston, Arkansas City; secretary, Mr. Gene Wilcox, Winfield.

The scientific program was presented by two members of the faculty of the Oklahoma University School of Medicine. Dr. Harry Wilkins spoke on "Headaches and Intractable Pain in General Practice," and Dr. Bert Keltz discussed "Present Management of Diabetes." Mr. Oliver E. Ebel, Topeka, spoke on medical legislation.

* * *

The Mitchell County Medical Society entertained legislators of that area at a dinner meeting at the Porter Hotel, Beloit, April 25. Informal talks were made by Senator Wayne Ryan, Clay Center, Representative William Weyland, LaCrosse, and Dr. F. R. Croson, Clay Center.

* * *

The Shawnee County Medical Society met May 2 at Topeka. A business session was held and a motion picture, "Clinic on the Deafened," was shown.

* * *

The Marion County Medical Society announces the election of the following officers: president, Dr. Charles Magee; vice president, Dr. E. S. Rich; secretary-treasurer, Dr. O. C. McCandless; director, Dr. G. J. Goodsheller.

* * *

The Reno County Medical Society held a joint meeting with the staff of the Grace Hospital, Hutchinson, on May 5. Speaker for the evening was Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, who discussed the future of the school, new concepts in medical education, and plans for short-term residencies and refresher courses to keep physicians in contact with current advances in medical practice. Representative F. D. Mundell, a brother of Dr. Walter Mundell, was a guest at the meeting.

* * *

A meeting of the Sedgwick County Society was held at the Broadview Hotel, Wichita, May 24, and the following officers were elected for 1950: president, Dr. E. L. Mills; vice president, Dr. G. F. Gsell; secretary, Dr. L. E. Vin Zant; treasurer, Dr. J. L. Beaver. Dr. Haddon Peck of St. Francis, president of the state Society, discussed the year's program and Mr. Oliver E. Ebel of Topeka, executive secretary, spoke on socialized medicine.

BOOK REVIEWS

Handbook of Materia Medica, Toxicology, and Pharmacology. By Forrest Damon Davison. Published by C. V. Mosby Company, St. Louis. 700 pages, 34 illustrations. Price \$8.50.

This handbook aims at the correlation of the essentials of drug actions with the study and practice of medicine. Curtailment of material is accomplished by selection and condensation, yet the field of materia medica, drug actions, and uses is adequately covered. Classification of therapeutic agents into groups of related actions simplifies the presentation.

Emphasis is placed on official drugs and their use in prescriptions to exemplify the text, which should add to the practical value of the book.

The sections on toxicology, toxic reactions to potent drugs, and the indicated treatment are especially complete.

From the viewpoint of pharmacology as a scientific basis of therapeutics, some of the author's views fail to agree with those expressed in more complete books on the subject. Some readers may feel that more explanation is desirable, and that for some sections a more complete documentation in accord with the recent literature would be an improvement. For such a broad subject perhaps additional bibliography could not be cited in this commendable handbook for introductory reading, ready reference, and review.—R.M.I.

* * *

Eye, Ear, Nose and Throat Manual for Nurses. By Roy H. Parkinson, M.D. Published by C. V. Mosby Company, St. Louis. 259 pages, 82 illustrations, two color plates. Price \$3.00.

This book is divided into three parts, the first a treatise for classroom work on Eye, Ear, Nose and Throat, the second, the subject of operating-room technique; the third part attempts to guide the public health nurse in pursuit of her particular problems.

Much more space would be needed to adequately review this book. However, its scope is indicated by the titles of its 12 chapters: Throat; Nose; Ear; Eye; External Ocular Diseases; Diseases of Refracting Media of the Eye; Internal Diseases of the Eyeball; Points in Care and Treatment of Eye, Ear, Nose, and Throat Conditions; Ear, Nose, and Throat Operations; Technic of Preparation and Conduction of Eye Operations; Description of Individual Eye Operations and Illustrations of Eye Instruments; and Eye, Ear, Nose and Throat Problems met by the Public Health Nurse.

The new material has increased the text's usefulness. However, the material covered for classroom use in the first division is generally covered in other

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textbooks just as thoroughly; but as a whole the text should prove valuable to instructors in the teaching of younger students in this field. Also, the book should make a favorable impression and be well accepted by younger students.

A few less desirable features of the book are: the illustrations could be more with the times. The operating-room technic is good, generally speaking, but brief. However, there could be much added to the advancement of enucleations of the eye and the rather new subject of implants. Also, the description of the individual eye operations could be more explanatory as to the approach, etc.

This book in regard to problems of the public health nurse is a brief survey of the field with very little background. It presents the ideal situation with very little criticism.

The general content of this book is worth while and would prove successful in the teaching of younger students, providing they were to receive more advanced courses in these fields as they progressed. This text is brief and gives only necessary directions and explanations. The book needs more basic character.—A.L.

* * *

Psychiatry for Nurses. Third Edition, 1949. By Louis J. Karnosh, M.D. Published by C. V. Mosby Company. 417 pages, 39 illustrations. Price \$4.00.

Psychiatry is treated as a medical specialty which has finally attained the same status as medicine and surgery in its usefulness to humanity.

Post war psychiatry stresses the preventive aspects of mental and nervous diseases.

An outline of the special functions of a psychiatric nurse includes basic principles of the nurse-patient relationship which are important in the management and treatment of psychiatric patients.

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There is a plain and simple discussion of disorders of the sexual life which is found in very few textbooks for nurses.

Psychiatry and law acquaint the psychiatric nurse with the legal aspects of psychiatry to spare her from embarrassment.

This book would be valuable to the postgraduate in a neuropsychiatric hospital. It might well be used as a reference for the student nurse, also.—M.T.

* * *

The Uses of Penicillin and Streptomycin. By Chester Scott Keefer, M.D. Published by University of Kansas Press, Lawrence, Kansas, 1949. 68 pages. Price \$2.00.

This book contains the three Porter lectures delivered by Dr. Keefer at the University of Kansas School of Medicine. As stated in the title of the book, two of the three lectures are about the clinical uses of penicillin and streptomycin. The third lecture reviews the historical development of man's search for antibacterial agents.

In this book is a vast amount of useful information for the general practitioner and the specialist. Dr. Keefer has assembled in a monograph of less than an hour's reading a vast amount of data collected over the past six or seven years. No one is in a better position than he is to do this, for as chairman of the Committee on Chemotherapeutic Agents of the National Research Council it was his task to distribute penicillin and streptomycin and to assess therapeutic results in this country.

The book is easy to read. It is written for the physician and contains much information that he should know. The various fractions of penicillin and streptomycin, mode of action, the relative sensitivity of bacteria, and the clinical response of bacterial diseases to these antibiotics are considered briefly, and yet adequately enough to tell the physician most of the practical points he would like to know.—H.A.W.

* * *

Fundamentals of Internal Medicine. Third Edition. By Wallace M. Yater. Published by Appleton-Century-Crofts, Inc., New York. 1451 pages, 315 illustrations. Price \$12.

The text strikes one immediately as being thoroughly revised and up to date. This is apparent in the descriptions of treatment, introducing such recent antibiotics as aureomycin and chloromycetin. The various disease entities are covered as comprehensively and clearly as could be expected in the space used. A section on electrocardiography is well illustrated and deals with such modern developments as the unipolar leads. Included at the end are very helpful chapters on Dietetics, Chemotherapy and Antibiotics, Symptomatic and Supportive Treatment, Inhalational Therapy, Clinical Values and Useful Tables, and one on "The Physician Himself." The author's system of giving a list of recommended texts at the end of each chapter is a commendable one. It is difficult to see how a volume of this size could cover such a broad subject more adequately. The book should be of great value to students and practitioners as a study text and source of review.—L.H.C.

* * *

The Ciba Collection of Medical Illustrations, a Compilation of Pathological and Anatomical Paintings Prepared by Frank H. Netter, M.D. Published by Ciba Pharmaceutical Products, Inc., Summit, New Jersey. 222 pages, 191 illustrations.



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This book, beautifully printed, presents in a single volume the many illustrations by Dr. Frank H. Netter which for the past ten years Ciba Pharmaceutical Products, Inc., has distributed to the medical profession as separate sets of plates in portfolio form. The illustrations, done largely in color, cover much of the normal and pathologic anatomy of the chest and abdomen, and are generously supplemented by reproductions of diagnostic x-ray films. The abbreviated texts which accompany each plate were written by Doctors Jacob Buckstein, Michael E. DeBakey, et al., Charles F. Geschickter, et al., Reuben A. MacBrayer, Henry H. Ritter, et al., Eli H. Rubin, and Samuel A. Vest.

This collection needs no re-evaluation since its various sections have separately elicited a generally favorable reaction from the medical profession for the past decade.—P.W.S.

* * *

Practical Aspects of Thyroid Disease. By George Crile, Jr. Published by W. B. Saunders Company, Philadelphia. 355 pages, 101 illustrations. Price \$6.00.

The author presents in this volume a comprehensive appraisal of thyroid disease in a concise, simple manner. Controversial theories are intentionally avoided in the volume.

The more recent methods of treatment of thyroid diseases with thiourea derivatives and radioactive substances are discussed, and their comparisons and relation to surgical treatment are rationally evaluated. The opinions and conclusions are based on 1000 cases personally examined and operated by the author and on close acquaintance with over 300 cases treated with prophylthiouracil, over 100 cases treated with methylthiouracil, and over 50 cases treated with radioactive iodine.

The technics, results, and complications of thyroid surgery on all types of goitres, malignant and non-malignant, are presented. The limitations of all forms of management of thyroid disease are discussed, and the need for the combined utilization of these diversified methods to obtain the best results in any individual case is stressed.—W.T.S.

* * *

Mayo Clinic Diet Manual. By Committee on Dietetics of Mayo Clinic. Published by W. B. Saunders Company, Philadelphia. 327 pages. Price \$4.00.

The Mayo Clinic Diet Manual contains a wealth of worthwhile information and it is all inclusive. An alphabetical index, as well as the table of contents which is included, would facilitate the use of the manual. The entire appendix is very practical. The food charts for iron, etc., are excellent because they give contents "per serving" as well as contents "per

100 gram portion." All charts are ruled and very easily read. The plan used in showing the foods included and excluded according to food groups is most useful.

The general description preceding each group of diets is valuable but in addition the dietary pattern and sample menu should have the composition repeated on the page with it so as to eliminate constant turning back of the pages.

The writers are to be commended in their constant emphasis on adequate nutrition throughout each therapeutic diet.—R.G.

* * *

Care of the Surgical Patient. By Jacob Fine, M.D. Published by W. B. Saunders Company, Philadelphia. 517 pages, 40 illustrations. Price \$8.00.

In the preface the author states that this book is intended to serve the special purpose of providing a ready guide for the over-all care of the surgical patient. This plan has been followed carefully. The essentials are here without any padding. Physiology and biochemistry are stressed when pertinent to the subject under discussion. Laboratory methods are discussed. Careful directions are given for pre-operative and postoperative treatment. Surgical complications are discussed in detail.

It is particularly refreshing to note a chapter on "Coincidental Medical Illnesses in Surgical Patients." The writer is aware that a surgeon must also be a physician even though he may confine his practice to surgery.

This is a valuable book for any surgeon, and it is particularly valuable for the intern or resident surgeon.—T.G.O.

Kansas Psychiatric Society Meets

New officers of the Kansas Psychiatric Society for the year ending in April, 1950, were chosen at a meeting held recently. Dr. C. J. Kurth, Wichita, is serving as president; Dr. J. T. Naramore, Larned, vice president; Dr. Frank F. Meeker, Topeka, secretary-treasurer; Dr. J. F. Casey and Dr. John M. Anderson, both of Topeka, councilors.

ANNOUNCEMENTS

July 18-30—Postgraduate Course in Chronic Chest Diseases Given by American Trudeau Society and University of Colorado School of Medicine, Denver, Colorado. Address American Trudeau Society, 1790 Broadway, New York City.

August 1-13—Intensive Personal Course in Cerebral Palsy, Cook County Graduate School of Medicine, M. A. Perlstein, M.D., Instructor. Address Registrar, 427 South Honore Street, Chicago 12, Illinois.

September 6-10—27th Annual Session, American Congress of Physical Medicine, Netherland Plaza Hotel, Cincinnati, Ohio. Address American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

October 27-29—Course in Gastrointestinal Surgery, Boston City Hospital, Boston, Massachusetts. Address National Gastroenterological Association, Department GSJ, 1819 Broadway, New York City.

The Neurological Hospital, 2625 The Paseo, Kansas City, Missouri. Operated by the Robinson Clinic, for the care and treatment of nervous and mental patients and associated conditions.

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ABSTRACTS FROM CURRENT LITERATURE

Epidemic Diarrhea

Epidemic Diarrhea of the Newborn. By Samuel Frant and Harold Abramson, Brennenman's Practice of Pediatrics, Volume I. Chapter 28, Section 2.

Epidemic diarrhea of the newborn is an acute communicable diarrheal disorder of unknown etiology affecting newborn infants in lying-in institutions within the first two weeks of life. It spreads rapidly from baby to baby and is characterized by a high death rate. Thus far in New York City among a total of 9,236 babies who were exposed to the disease, 1,233 were attacked, a morbidity rate of 13.4 per cent; 540 of the infected babies died, the mortality rate being 5.8 per cent and the case fatality rate being 43.6 per cent. In the main, the data thus far derived from the extensive bacteriologic studies of these cases have revealed no definite organism. Nothing characteristic of the disease has been noted in extensive post mortem examinations.

Most of the babies were taken ill on the second to the 16th day of life, but the spread may vary from one to 33 days. No adults caring for these infants have been infected by them, nor have there been infections among older infants and children in open pediatric wards in which these children were treated. No difference was noted in the attack rate whether the infant was bottle or breast fed. So far the epidemics have appeared in cities located in the north central zone. The overcrowding of nurseries and presence of much inadequately trained personnel have been contributory factors.

The incubation period is from one to 31 days with an average of 10 days. Early in the course of the outbreak the acute symptoms may be preceded for one or two days by preliminary signs indicative of a gastro-intestinal disturbance, such as lack of appetite, drowsiness, arrested weight accretion or loss of weight, occasional vomiting and distention, and change in the character and the frequency of the stools. Usually the temperature is normal. In the toxic stage the infant previously healthy rapidly changes to an intensely dehydrated and toxic infant in shock. The acid stools are expelled forcibly, increase considerably in frequency and are characteristically watery and yellow, less often greenish or brownish. Blood and pus are conspicuously absent, and little or no mucus or curds is seen. With marked depletion of body fluids considerable weight loss occurs, amounting to as much as a pound or more a day. Signs of severe dehydration and acidosis ensue. Drowsiness deepens into coma and the cry is feeble

and short. Vasomotor collapse is indicated by ashen gray color and cherry red lips. The skin and mucous membranes are dry and tissue turgor is lost. The eyeballs and fontanels are sunken and the breathing is hyperpneic. There is usually little vomiting and the general physical examination is essentially negative.

The complications in the main are terminal infections.

In fatal cases death occurred in from one to 25 days; average duration of the illness in recovered cases was 12 days.

Laboratory findings show hemoconcentration and marked depression of the carbondioxide combining power—as low as five or 10 volumes per cent.

In unsuspected and uncontrolled outbreaks a wide dispersion of exposed and infected babies occurs. Cases are discharged from the hospital and after showing manifest signs of the disease at home either are returned to the hospital for care and treatment or admitted to another hospital. Still other babies are taken out of the hospital and are lost for observation and follow up. In addition other infants became sick at home, where the seriousness of their illness is overlooked, and they die at home.

Diagnosis is difficult early in an epidemic; however, if more than one infant develops a loose stool in a nursery it is safer to close the nursery unit until diagnosis is established. Lack of blood and mucus in the stools and essentially negative post mortem findings suggest epidemic diarrhea of the newborn. Explosive liquid yellow stools are characteristic early.

Generally speaking the prognosis for this disease is very poor. Among babies exposed about 15 per cent get the disease, with a general mortality rate of seven per cent and a case mortality rate of 50 per cent. Prognosis is much worse in premature infants. These figures are greatly modified by early diagnosis and treatment.

The treatment is non-specific. Penicillin, sulfa preparations and small blood transfusions after adequate hydration are helpful. Essentially the therapy should be directed toward combating impending or existing acidosis and dehydration, and toward the replacement of depleted body fluids. Food is restricted 12 to 24 hours. The continuous method of intravenous injection is probably the most effective and is the method of choice to restore adequate fluids.

Control and prevention of these outbreaks are greatly dependent on the strict supervision of nurseries and their personnel. The first case should be reported to the public health department as soon as it is recognized. The obstetric services and the newborn service should be completely closed immedi-

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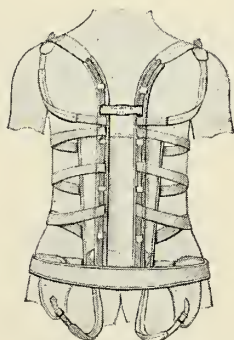
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ately on recognition of the disease. It has been the authors' experience that temporary makeshift arrangements or half-hearted measures serve only to increase the morbidity and mortality. Standards for the care of the premature and the newborn infants as recommended by the U. S. Public Health Service should be strictly adhered to.—D.R.D.

* * *

Surgery of the Colon

Oral Streptomycin in Surgery of the Colon. By James Patrick Fleming, *Jnl. Inter. Coll. Surg.*, XI:4, 378-385, July-Aug., 1948.

The author employs sulfathaladine in the usual dosage (0.1 gm. per kg. of body weight) daily for five to seven days preoperatively. To this he has added oral streptomycin which, he states, "...has proved to be more potent than either succinylsulfathiazole or sulfathalidine when administered orally at the rate of two grams (two million units) daily—providing, however, that it is not given for more than two successive days (48 hours) as it has been shown that beyond such dosage and time the coliform organisms develop a resistance to the drug..."

This is accomplished by dissolving two gms. (one ampule) of the drug in a pint of water and administering two ounces orally every four hours, four

grams being used in the 48-hour period preceding surgery.

He is "also using two gms. (streptomycin) in saline in the peritoneal cavity following resection with open anastomosis." Where contamination has occurred this is supplemented by 0.25 gm. every four hours for two days, intramuscularly. Penicillin in oil, 300,000 units intramuscularly, is also employed routinely for two days following surgery.

The article also considers in detail general problems of pre- and post-operative care in this type of surgery.—T.P.B.

Kansas College of Physicians Meets

A meeting of Kansas members of the American College of Surgeons was held at Wichita April 29, with Dr. Lee Leger and Dr. Earl Mills in charge of the program. Dr. A. B. Brower, Dayton, Ohio, a regent of the college, was guest speaker. Plans were made for a meeting in March of next year at Topeka, and Dr. Nathaniel Uhr was named chairman of the program committee, with Dr. Sloan Wilson and Dr. Clarence Erickson as committee members.

There are now more than 40 members of the college in Kansas. Dr. W. C. Menninger is governor of the group this year.

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John deJ. Pemberton, M.D., Professor of Surgery, Mayo Foundation.

Fred W. Stewart, M.D., Pathologist to Memorial Hospital Center, New York.

Fred D. Weidman, M.D., Professor of Research in Dermatology and Mycology, University of Pennsylvania.

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Volume L

JULY, 1949

No. 7

Value of X-Ray Therapy in Orthopedic Cases

Charles M. White, M.D., and Charles Rombold, M.D.*

Wichita, Kansas

The rheumatic diseases include a number of different entities, most of which are characterized by chronicity and an unknown etiology. A great number of different treatments have been tried but no specifics have been found. Among these is Roentgen therapy which has been used sporadically since the discovery of the x-ray in 1895. In the past year we have employed x-ray therapy in a number of different rheumatic syndromes. It is our purpose here to survey the results obtained and compare them with those of others in an effort to determine its usefulness in our hands.

Surveys of the history of x-ray therapy of rheumatic disease are readily available in a number of articles such as those by Garland³ and Freyberg.² It was tried by several men near the turn of the century in Europe who reported encouraging results. Shortly thereafter it was employed in the United States.¹ It has been used moderately throughout the United States in the last two decades.

Material

We have chosen for study a group of 100 consecutive rheumatic cases treated with x-ray in the past year. Nearly all of these were seen originally in the orthopedic department where the various diagnoses were made. The group of 100 cases is made up of the following:

- 27—Bursitis
- 21—Hypertrophic spondylitis and/or fibrositis
- 17—Osteoarthritis
- 13—Synovitis
- 12—Marie-Strumpell arthritis
- 4—Rheumatoid arthritis
- 6—Miscellaneous.

At the outset we felt that the indication for x-ray therapy in Marie-Strumpell arthritis and shoulder bursitis was unquestioned because of previous experience. Reports concerning its use in the other rheu-

matic diseases were conflicting. In a number of our cases, particularly in the hypertrophic spondylitis of the spine and osteoarthritis groups, every other method of therapy had been tried to no avail. X-ray was used in these in face of the knowledge that it would probably be of no benefit.

Technique

In general the technique of treatment used has been much the same for all the cases. Factors usually employed are 200 KvP with one mm. of Cu. and one mm. of Al filtration and a focal-skin distance of 50 cm. In thinner areas such as the wrist and ankle the kilovoltage is dropped to 150 and the filtration to $\frac{1}{4}$ mm. of Cu. In chronic cases 200 r are given once a week, four times, for a total dose of 800 r. If no improvement is seen at the fourth treatment it is doubtful if more will give benefit. If there is slight improvement, an additional two treatments are frequently given. Multiple portals are used wherever possible.

The treatment of Marie-Strumpell arthritis and shoulder bursitis is an exception to the above technique. In Marie-Strumpell arthritis, usually the entire back is treated using portals as indicated in Figure 1. Wide fields have been used because according to Freyberg,² the results depend not only upon irradiating the spine and joints but also the muscles and their attachments. Where the disease is definitely localized, all the painful area and several segments beyond are treated. It is felt by some² that the process may be localized in some areas such as the sacroiliac joints and never progress higher. On each treatment day two portals are treated, giving 200 r to each. Three treatments are given in each week until 600 r have been given to each portal of the spine. In the usual case the treatment is completed in two weeks. If symptoms persist six weeks later, another series is given. If no relief is then obtained it is felt that more treatment is not indicated.² Subsequent series in the improved cases may be

*Departments of Radiology and Orthopedics, Wichita Clinic.

given as symptoms arise in the future; however, the dosage should be diminished.

In acute shoulder bursitis the first treatment given is usually 100 r with subsequent treatments on alternate days, increasing the dose to 200 r unless the patient has too much increased pain. Two or three treatments will sometimes suffice. Chronic cases are given 200 r once a week, from four to six times. Young¹⁵ found that varying the treatment intervals did not affect the results in his cases of shoulder bursitis.

The techniques listed above vary from those of some authors. The difference is probably of no significance. It is probable that identical results would be obtained with different KvP such as 150 or 170

instead of 200. The filter used could be $\frac{1}{2}$ mm. Cu. as well as one. Others¹² have also felt that minor differences in technique and method of treatment had little or no effect on the results obtained.

Results

The evaluation of results obtained may be arrived at by subjective or objective methods. Both methods have been used by some authors. The use of objective methods is time-consuming and is unable to assess the way the patient feels about it which is, after all, most important. Objective measurements are made in the orthopedic department but for the purpose of this study, subjective responses were used. About one month after cessation of treatment the patient is asked in a straightforward manner if he feels better or unimproved following the x-ray therapy. If he replies better, he is asked to estimate the amount as 25, 50, 75 or 100 per cent. If he answers 50 per cent or more, the improvement is felt to be significant; otherwise it is felt that there has been no improvement.

Grouping all cases together, the following results were obtained:

	26—unimproved
	12—improved 25 per cent
62 per cent cases	24—improved 50 per cent
significant	23—improved 75 per cent
improvement	15—improved 100 per cent

In short, 62 per cent of cases showed what was felt to be a significant improvement.

Results in the different types of rheumatic disease treated are listed in Table I.

Out of the entire group it is most satisfying to treat Marie-Strumpell arthritis. Nearly all cases occur in young men who find it necessary to be active as they are just getting started for themselves. They come in, appearing toxic, worried, losing weight, and with a characteristic progressive kyphosis. It is a thrill to see them a month later walking erect, happy and confident. They are among some of the most grateful patients.

In our group of 12 cases, 75 per cent showed significant improvement. This is about the same as that reported by others.^{2, 8, 12} One showing no improvement was an old case. The earliest cases show the most complete improvement. It should be pointed out, however, that even some patients with calcification of ligaments may increase their range of motion.¹¹ Some of our cases with marked stiffness showed little x-ray evidence of the disease. Solomon¹³ reports the same finding. When ligamentous calcification is advanced, however, treatment should only be expected to relieve pain and muscle spasm.²

The sedimentation rate is usually elevated in Marie-Strumpell arthritis but some cases maintain

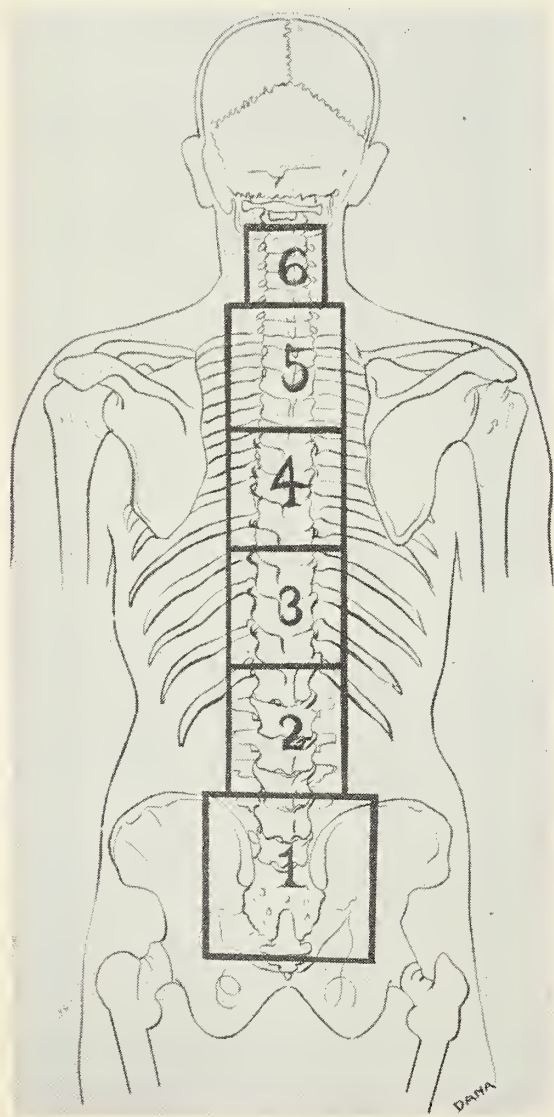


Figure 1. Treatment areas in Marie-Strumpell arthritis. Field 1 usually 20x20 cm; field 2, 3, 4 and 5 usually 15x15 cm; field 6 usually 10x10 cm. Number of fields used depends on extent of disease and height of patient.

a high rate although being improved. It is reported that 41 per cent of cases show a decreasing rate after treatment.¹¹

Results of x-ray therapy in 100 cases of various types of rheumatic disease.

Disease	% Cases no significant improvement	% Cases significant improvement
Synovitis	8%	92%
Shoulder Bursitis	12%	88%
Marie-Strumpell Arthritis	25%	75%
Osteoarthritis	47%	53%
Hypertrophic Spondylitis and Fibrositis	62%	38%
All Cases	38%	62%

Table I

The duration of improvement in Marie-Strumpell arthritis following therapy is not definitely known. Some have been reported as long as five years.² It has been pointed out, however, that improvement such as increase in chest expansion and spinal motion, reduction in paravertebral muscular tenderness and improvement in general disability may be due to relief of pain. Control of the symptoms does not mean the disease process has been checked.¹¹ Perhaps the technical points cannot yet be settled but here is certainly one place where the clinical results may speak for themselves.

The treatment of bursitis is also very gratifying. In our series there were 27 cases of which 18 had typical shoulder bursitis. Most of these were seen in the subacute and chronic phase, yet 88 per cent of them showed a significant improvement. However, it is true that acute cases do respond better so an effort should be made to give x-ray therapy as early as possible.^{7, 15} Some of our cases had calcium deposits and others did not. This fact seems to have no bearing on the results obtained.¹⁵ Some of the calcium deposits disappear following therapy but others do not. Here again this seems to have no bearing on the results.

It should be pointed out that the above group of shoulder bursitis cases does not include three patients with painful shoulder, possibly bursitis, associated with a causalgia state composed of pain and vasomotor disturbance in the arm or hand. None of these showed any improvement. If such cases have followed an injury with damage to a nerve, surgery apparently offers the best results.⁶

Our other cases of bursitis were as follows:

2—Calcaneal (neither case improved)

1—Trochanteric (did not improve)

1—Plantar (significant improvement)

2—Radio-Humeral (both improved significantly)

Freyberg² also reports that 50 per cent of ischial, trochanteric or Achillis bursitis are improved.

We have had very good results in the treatment of joint disability diagnosed as synovitis by the ortho-

pedic department. They have found that this may develop following slight trauma or surgery to the joint. The joint is painful, swollen and usually demonstrates increased heat. There usually is an increase in the amount of synovial fluid which has an increased cell count but is aseptic. At operation the synovia is injected and edematous. In our series of cases there have been 13 diagnosed as synovitis. Nine of these involved the knee with two each in the ankle and wrist. Only one case was unimproved. Five declared themselves cured. Ninety-two per cent of the 13 cases showed significant improvement. As yet none have recurred. Rhodes¹⁰ warns that in the wrist a recurring tenosynovitis is probably tuberculous. This possibility should be kept in mind.

Results in the treatment of osteoarthritis have not been outstanding yet very worthwhile in some cases. There were 17 cases of osteoarthritis in the series. Seven of these were in the hip, six in the knee, two in the foot and one each in shoulder and sacroiliac joints. Out of this group eight, or 47 per cent, showed no significant improvement while nine, or 53 per cent, did show significant improvement. Others⁸ have found that in treatment of rheumatic disturbances, their poorest results have been in osteoarthritis. If there is spur formation and articular derangement, little improvement can be expected.⁸ Four of the cases in this group were those of malum coxae senilis. It has been the experience of some² that these do not respond to x-ray therapy, yet half of our cases showed a significant improvement.

The most discouraging group was that diagnosed as hypertrophic spondylitis of the spine and/or fibrositis. Some of the cases with no x-ray changes were thought to be fibrositis. It was our opinion that in cases of hypertrophic spondylitis an associated fibrositis was responsible for the symptoms. Freyberg² also feels that results in hypertrophic spondylitis are due to relief of fibrositis. Fibrositis is defined as a painful condition affecting fibrous tissue of muscle, fascial planes, and periarticular tissues which is commonly found in the lower back, glutei, shoulder girdles, and the neck.¹⁴ In this group of ours there were 21 cases. Eight, or 38 per cent, showed a significant improvement while 13, or 62 per cent, showed no significant improvement. Freyberg² reports that 50 per cent of his cases obtained relief. Garland³ reported that he obtained fair results.

After consideration of the above groups, there remain 10 cases. Four of these were rheumatoid arthritis, four of peritendonitis and two of chondromalacia of the patella. Half of these cases showed a significant improvement, although none recovered more than 75 per cent. Except for rheumatoid arthritis, statistics concerning these other cases are

not available in the literature for comparison. There is little agreement in various reports about the results in rheumatoid arthritis. Freyberg^{2, 12} reports poor results while others^{1, 8} report encouraging results. We have not treated enough cases to draw any conclusions. Of our four cases, 50 per cent showed improvement. Other miscellaneous joint afflictions include gonorrheal arthritis and gout. Good results have been reported^{1, 3} in the treatment of these. At this time, however, it would seem best to use chemotherapy or antibiotics for the specific infectious arthritides.

Results of x-ray therapy in the entire group are apparent by diminution of swelling, subsidence of articular exudate, local analgesia, decrease in muscle spasm, and increased range of motion.⁸ The fundamental mechanism behind this, however, is not known. Garland³ at one time felt that x-ray caused destruction of lymphocytes which liberated certain proteins. These stimulate localization of inflammatory processes and absorption of regional exudate. He thought that the analgesia was probably due to the decrease in swelling. Other theories have been enumerated based on chemical, metabolic or immunologic effects of x-ray. It is felt that these all lack convincing proof⁹ and that there is as yet no acceptable theory as to why x-ray is of benefit.¹²

Some people may obtain relief of pain on a psychic basis following x-ray therapy. Some authors¹² feel that this is considerable while others⁸ with controlled study are of the opinion that the psychic effect of roentgenotherapy is not an important part in the improvement. We think that it played little part in the improvement of our cases because results were not assessed until a month later, and also because at the beginning of treatment the patient was told in each case the basis for the treatment, and that he might not receive any benefit at all.

In summary, we think that the results of x-ray therapy in the types of cases discussed are very encouraging. It should not be considered as a definite cure but as a helpful local measure in certain cases.⁸ Some⁹ go so far as to say that a greater percentage of improvement is obtained using x-ray therapy than can be effected by any other method of treatment. Gelber⁴ states that it is a practical, economical and efficient method of treatment for arthritis and bursitis with lasting results. It is our opinion that the patient should not only receive x-ray therapy if indicated but also the usual medical and orthopedic treatment.

Complications

Fortunately the complications of x-ray therapy when used as described are few and easy to manage. Irradiation sickness is of first concern to the patient. It is commonly seen in the treatment of Marie-

Strumpell arthritis. We have had good results with the administration of pyridoxine HCl, 25 mgm. daily, and thiamin C1, 10 mgm. three times daily by mouth. We have also used, and like, Nidoxital which is a capsule containing pyridoxine and other active ingredients.

In treating the spine, as in Marie-Strumpell arthritis, a leukopenia may develop. Periodic blood counts should be made and x-ray therapy temporarily stopped if the white cell count drops below 3000. It will usually quickly rise again and treatment can then be continued.

Skin damage is minimal because of the low dosage levels used. An occasional person may develop some telangiectasia some years later. Accurate records of the amount of x-ray given must be kept to protect the patient in the event several series of treatment are given.

There have been collected⁵ 24 cases of bone sarcoma following x-ray or radium irradiation. This is of interest since in treating arthritis, one is treating joints, commonly the knee. In all of the cases reported, however, very large doses of x-ray or radium were given in fractional doses over a long period of time. We feel that this complication is not a danger in the treatment of the conditions discussed in this paper using the techniques outlined.

Because of the possibility of sterilization, treatment of the low back and pelvis of young women is discouraged. If the patient has fibrositis she should be treated by different methods. If she has Marie-Strumpell arthritis, the possibilities should be explained to her and treatment not given without written consent, made with the understanding that sterilization may occur. Reduced dosage should be employed and it may be possible to arrest the process without causing sterilization. Having obtained written consent, however, the first consideration in this disease should be to bring about a remission.

Conclusions

1. Results of Roentgen therapy in 100 cases of various rheumatic diseases are reviewed and compared with those reported by others.
2. Technique of Roentgen therapy in the various rheumatic diseases is outlined.
3. Complications of Roentgen therapy as used in these diseases are nil.
4. Roentgen therapy is of very great benefit in cases of Marie-Strumpell arthritis, synovitis, and shoulder bursitis.
5. Results of Roentgen therapy in osteoarthritis and fibrositis are not outstanding but are sufficient to justify its continued use.
6. Roentgen therapy should be used as a local treatment in these rheumatic conditions in conjunction with orthopedic and medical measures.

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CANCER SUPPLEMENT IN AUGUST

Next month, for the first time in its history, the Journal of the Kansas Medical Society will publish a supplement. It will contain all of the scientific papers presented at the First Annual Mid-West Cancer Conference held at Wichita, January 20 and 21, 1949. Publication of the supplement is a joint project of the Committee on Control of Cancer of the Kansas Medical Society and the Kansas Division of the American Cancer Society. Copies of the supplement will be mailed out with the August issue of the Journal.

Brucella Bacteremia With Endocarditis

Harold W. Voth, M.D.

Kansas City, Kansas

The rarity of reported cases of endocarditis associated with brucellosis is impressive. In 1897, Hughes¹ reported the post mortem findings in three cases in which endocarditis was found as a complication of *Brucella mellitensis*. In 1926, Moore and Carpenter² reported a case of subacute bacterial endocarditis due to *Brucella abortus* which at post mortem revealed a vegetative endocarditis implanted on an old deformed aortic valve. Scott and Saphir³ studied a patient with *Brucella abortus* bacteremia who presented fresh vegetations on scarred mitral and aortic valves at autopsy. Cases of brucellosis with associated endocarditis implanted on an old deformed valve or superimposed upon chronic endocarditis verified by necropsy have been reported by de La Chapelle⁴, Gounelle and Warter⁵, Rennie and Young⁶, Levy and Singerman⁷, Spink and Nelson⁸, Smith and Curtis⁹, Spink, Titrud and Kabler¹⁰, and Call, Baggenstoss, and Merritt¹¹. Lagriffoul, Roger and Sarradon¹², Gate and Ravault¹³, and Knighton¹⁴ have reported three additional cases of endocarditis associated with undulant fever with no post mortem confirmation.

The occurrence of *Brucella* endocarditis on a bicuspid aortic valve was reported by Wechsler and Gustafson¹⁵ in 1942.

According to Spink and Nelson⁸, many of the cases reported as *Brucella* endocarditis presented inadequate and bacteriological proof. They list the case of Casanova and d'Ignazio¹⁶ and that of Rothman¹⁷ as the only two substantiated by bacteriological and anatomical evidence at necropsy and add one of their own.

Since publication of Spink and Nelson's⁸ article, Smith and Curtis⁹, Spink, Titrud and Kabler¹⁰, DeGowin, Carter, and Borts¹⁸ each have reported cases which were proven by bacteriologic and anatomic evidence obtained at autopsy.

The cases of Spink and Nelson⁸ and that of DeGowin, Carter, and Borts¹⁸ are of interest because the *Brucella* infection was apparently superimposed on previously normal valves. In addition the organism in the report of DeGowin, Carter, and Borts¹⁸ was *Brucella suis*, an unusual strain associated with endocarditis. All other case reports give *Brucella mellitensis* or *abortus* as the etiologic agent.

Although cases of undulant fever with associated endocarditis have been universally fatal, the com-

bination of streptomycin and sulfadiazine apparently shows some promise.

Two patients ill with brucellosis and an associated endocarditis involving the aortic valves due to *Brucella abortus* were treated with streptomycin and sulfadiazine by Spink, et al¹⁹. The first patient received streptomycin and later sulfadiazine, but died from myocardial failure. Necropsy revealed a bicuspid aortic valve with superimposed vegetations. Apparently the therapy eradicated the *Brucella* organism from the tissues and blood for no organisms were cultured from the post mortem material. The second patient who clinically had undulant fever with endocarditis received streptomycin and sulfadiazine concomitantly. Repeated blood cultures were negative and a liver biopsy revealed no granulomatous lesions. The patient was well nine months after completion of the treatment, at which time the article was published.

Case Report

W.W., a 54-year-old white male, entered the University of Kansas Medical Center complaining of malaise, weight loss, weakness, low grade fever and back pain. The patient had noted exertional dyspnea for 20 years. Ten years ago a diagnosis of heart disease was made by a company physician. Six years ago he ceased working and undertook a leisurely life, spending a portion of his time on a farm. He drank raw milk from a herd which included several cows that had aborted in the past year. Since January, 1948, there had been an insidious onset of general muscular weakness, weight loss, anorexia, marked fatigue, tenderness in the upper left quadrant and progressive dyspnea. During the next three months the patient had a series of chills and fever with marked perspiration associated with pain, swelling and tenderness of the left knee. The pain and tenderness migrated to the right knee and then to the small of the back where it persisted. Six weeks prior to admission he again developed chills and fever which lasted only three days. Two weeks later he suffered an attack of sharp substernal pain with a rapid cardiac rate. Medication was instituted and several days later the rate returned to normal with disappearance of the chest pain. One week following the "heart attack" he developed a tender, swollen right ankle which persisted for five days. At this time he also discovered a mass in the left upper quadrant.

His past history revealed no scarlet fever, arthritis or rheumatic fever.

Physical examination showed a middle aged white male who appeared acutely and chronically ill with a sallow, pale skin. He weighed 163 pounds. The blood pressure was 90/60, pulse 96 with frequent extra-systoles, temperature 100 degrees. Petechia were seen in both conjunctiva. The fundoscopic examination was negative. A few fine rales were heard in the left lung base. The heart was moderately enlarged. Cardiac dullness extended two cm. to the left of the mid-clavicular line. A systolic thrill was felt at the apex. There was a loud, rasping murmur at the mitral and aortic areas with an inconsistent, faint mitral diastolic murmur. The spleen extended downward to the level of the umbilicus. The liver was enlarged three fingers below the costal margin. Both spleen and liver were tender. One plus pitting edema of both ankles was present. Numerous petechia were present over both lower legs. A tender poker spine was prominent.

Laboratory findings included the following: the hemoglobin was 60 per cent on entry. There were 4,530,000 red blood cells and 3,600 white blood cells per cu. mm. The differential count showed 82 per cent polymorphonuclear neutrophils, 10 per cent lymphocytes, 3 per cent basophiles and 5 per cent monocytes. Thereafter, the hemoglobin level varied little. The white blood count remained between 4,000 and 5,000 with little change in the differential count. Wasserman and Kahn tests done on blood serum were negative. The blood non-protein-nitrogen was 60 mgm. per 100 cc. and the creatinine 2.6 mgm. per 100 cc. During hospitalization the non-protein-nitrogen varied between 33 mgm. and 60 mg. per cc. Admission urine showed an acid reaction with a specific gravity of 1.010, which varied plus or minus .002. Repeated specimens contained one plus albumin, 1 to 12 plus cells, 2 to 15 red blood cells and numerous casts per high powered field. The urea clearance kidney function test showed 53 per cent of average normal function. A hepatogram revealed the following results: hippuric acid 0, bromosulphthalein 25 per cent, cephalin cholesterol flocculation three plus, thymol turbidity 32, serum albumin 3.5 gram per cent, serum globulin 3.5 gram per cent, icteric index 5 units, prothrombin time 72 per cent of normal, and urine urobilinogen 0.7 units in a two hour specimen. A lumbar puncture showed 29 white blood cells, six red blood cells, negative Wasserman, and total proteins 80.6 mgm. per 100 cc. Agglutination tests on the blood for *Brucella abortus* were positive in a dilution of one to 5,120 on two occasions and one to 1,280 after three weeks of therapy. Five consecutive blood cultures yielded a growth of *Brucella abortus*. Blood drawn for cultures after three weeks of therapy was

negative. Spinal fluid was cultured but no organisms were grown.

Roentgenological examination of the chest showed cardiac enlargement. Osteoarthritic changes were noted in a study of the lumbar spine.

Electrocardiograms showed sinus tachycardia, auricular prematurities and mild myocardial changes. A sound tracing revealed a late diastolic and systolic murmur recorded best at the apex.

During the hospital course, therapy consisted of three grams of streptomycin for three days, then two grams of streptomycin for three days and then a decrease to one gram daily; sulfadiazine, grams one every four hours with an equal amount of soda; vitamin C, 100 mg. four times daily and rutin, 50 mgm. three times daily. The patient received four blood transfusions and daily infusions when the fluid and food intake were inadequate. Three days after admission petechia were noted on the right chest. The petechia on the conjunctiva and lower legs gradually disappeared. A week after admission several splinter hemorrhages were noted. The liver and spleen gradually regressed in size; however, two weeks after admission the patient suddenly developed a severe pain in the splenic region with enlargement to former size. After three weeks of therapy, vertigo and numbness of the legs became quite prominent; therefore, streptomycin was discontinued for several days until the symptoms abated when therapy was again resumed. While in the hospital he ran a low grade fever up to 102 degrees which gradually became lower over a period of several weeks. Four weeks after admission the patient was feeling quite well when suddenly he experienced a sharp, lancinating pain substernally, radiating down both arms with accompanying dyspnea. Several hours later he developed coarse, crackling rales concentrated in the right lateral chest. The blood pressure dropped to 90/60, and the pulse became rapid, weak, and thready. The following morning dullness, diminished breath sounds, and rales were noted in the right lateral chest. An x-ray of the chest at this time showed a zone of opacity fanning out from the right hilum, a picture consistent with a diagnosis of pulmonary infarction. The cardiac murmurs previously heard disappeared and faint continuous murmurs over the entire precordium were heard. The patient went into shock, vomited several hundred cc. of fluid and in spite of supportive therapy died 60 hours after the initial attack of chest pain.

Post-Mortem Examination

The autopsy was performed six hours after death.

General Inspection—The body was that of a well developed rather poorly nourished 54-year-old white male. Rigor mortis was not present but there was

livor mortis over the most dependent posterior portions. Numerous minute pigmented areas were scattered over the legs. The abdomen was scaphoid. There was minimal edema of the ankles and feet.

Peritoneal Cavity—The surfaces were smooth, moist, and glistening. No free fluid or adhesions were present. The abdominal viscera occupied their usual relationship to one another. The liver edge was visible three cm. below the right costal margin.

Pleural Cavity—The surfaces were smooth and glistening. No adhesions were present. The right pleural cavity contained 1000 cc. of amber fluid and the left, 250 cc. The organs showed normal relationships and no abnormalities were found.

Heart—The pericardial sac contained approximately 100 cc. of amber fluid. The pericardial and epicardial surfaces were smooth. The heart weighed 465 grams and was roughly globular in shape. The myocardium was beefy red in color and rather firm in consistency. The four chambers of the heart were distinct and the foramen ovale was not patent. The left ventricle showed moderate hypertrophy. The measurements of the valves were as follows: tricuspid, 13.1 cm.; mitral, 11.9 cm.; pulmonary, 9 cm.; and aortic, 7.6 cm. In the superior aspect of the left ventricle, proximal to but not involving the aorta, was a roughly circular, well circumscribed hematoma two cm. in diameter which apparently originated from a ruptured aneurysm of the sinus of Valsalva

and invaded the surrounding myocardium (Figure 1). The aortic valve was bicuspid, thickened, nodular and distorted. Small, pebbled, firm, yellowish-white, calcific masses were present largely along the free edge of the cusp but did extend towards the base of the valve producing a fixed deformity. Some of the nodules were ulcerated and surrounded or covered by small grayish vegetations. The mitral valve was thickened and scarred. Small, calcific, yellowish-white nodules with ulceration were also present along the free margin of the mitral valve. The coronary arteries were patent. Numerous small plaques were present on the intimal surface. Microscopic study revealed an increase of fibrous tissue throughout the myocardium with considerable round cell infiltration. In some fields the muscle fibers were swollen, ill-defined and almost completely replaced by fibrous tissue. The valves showed hyaline degeneration, vascularization, beginning calcification with an irregular accumulation of fibroblastic cells and a few scattered monocytes. The surfaces of the valves showed fibrinoid material infiltrated with a considerable number of polymorphonuclear leukocytes and a few colonies of small cocco-bacillary organisms. A section through the base of the aorta showed vacuolization of the muscle fibers of the media with an adjacent blood clot surrounded by hyaline fibrous tissue near a layer of degenerating muscle fibers. The fibrinoid material was also abundant over the surface of the sinus of Valsalva.

Lungs—The right lung weighed 550 grams and the left, 445 grams. They were similar in appearance. The consistency was increased throughout and crepitus decreased throughout. The cut surface was dark, beefy red in color and appeared somewhat dull. The alveoli were not as distinct as usual and only a minimal amount of frothy fluid could be expressed. The trachea and bronchi were patent throughout. All pulmonary vessels were patent. Microscopically the mesothelial cells were unusually prominent. The framework was thickened and cellular. Heart failure cells and areas of congestion were noted. The bronchi contained a mucoid material with mono and polymorphonuclear leukocytes.

Liver—The liver weighed 2180 grams, measured 25 cm. by 22 cm. by 8 cm. and was roughly wedged shaped, firm, brownish purple in color. The edges were sharp and lobulation was visible through the capsule. The portal spaces and central areas were not remarkable. Microscopically, the architecture was distinct. The liver cells were swollen and showed central vacuolization and necrosis. The portal spaces were infiltrated with round cells.

Spleen—The spleen weighed 325 grams and measured 17 cm. by 10 cm. by 3.5 cm. It was roughly ovoid in shape, reddish-purple in color and firmer

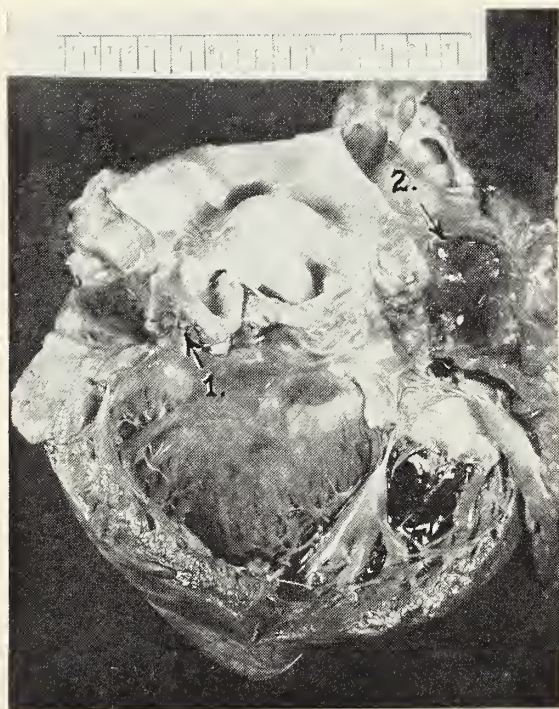


Figure 1. 1. Ulcerative vegetative endocarditis superimposed on a previously damaged bicuspid aortic valve. 2. Hematoma originating from a mycotic aneurysm of the sinus of Valsalva.

than usual. The pulp appeared red and granular. Trabeculation was not increased. The Malpighian bodies were distinct. Several yellowish areas of necrosis surrounded by hyperemia were scattered throughout. Microscopically, the architecture was distinct in most fields; however, areas of coagulation necrosis were present, surrounded by a zone of cellular infiltration and collections of blood pigment.

Kidney—Both kidneys weighed 200 grams. The left kidney measured 13 cm. by 7 cm. by 3.5 cm., the right, 12 cm. by 7.5 cm. by 4.5 cm. The organs were roughly bean shaped. They were pale brownish-red in color. The capsules stripped with ease leaving a smooth, pale surface with scattered, small red dots of pin-point size. On cut section the usual corticomedullary relationship was present. Striation were not distinct and the glomeruli were not prominent. The medulla was pale and the pyramids were indistinct. The corticomedullary junction was indistinct, particularly on the left. The pelves were not dilated. Cut section through the superior pole of the right kidney showed a dark red infarct one cm. by two cm. Microscopic study revealed a decrease in the vascularity and an increase in the cellularity of the glomerular tufts. The capsules were not thickened. The tubular epithelium was swollen. There were focal areas of increased cellular fibrous stroma which were infiltrated by round cells.

Splenic Artery—Near the left kidney the splenic artery was tortuous and dilated for a length of two cm. This portion of the artery contained a thrombus which microscopically revealed partial organization and recanalization.

Gall Bladder—The gall bladder was 5.5 cm. in diameter and contained 50 cc. of bile and 23 polygonal multifaceted stones. The lumen of the common duct was patent. Microscopically the mucosa was eroded, the wall was thickened, fibrotic and infiltrated with round cells.

The remainder of the organs showed nothing unusual.

Anatomic Diagnosis—Bicuspid aortic valve; subacute and chronic endocarditis with unusual nodular calcification; organizing hematoma at the root of the aorta from the sinus of Valsalva; cardiac dilatation and hypertrophy; chronic myocarditis and fibrosis; bilateral hydrothorax; hydropericardium; organizing infarcts of the spleen and right kidney; chronic periportal hepatitis; chronic passive congestion of the liver and spleen; coronary atherosclerosis; thrombosis of the splenic vein; chronic cholecystitis and cholelithiasis; and bronchopneumonia with pulmonary congestion.

Bacteriologic Studies of Post-Mortem Tissues—

No proven *Brucella* organisms were cultured from tissues obtained at necropsy.

Discussion

The case described presents features similar to those found in previously reported cases. The vegetative endocarditis was implanted on a deformed bicuspid aortic valve and superimposed on a chronic endocarditis involving both aortic and mitral valves. Review of the literature indicates that the presence of an old endocardial lesion is the rule.

Rupture of the sinus of Valsalva due to a mycotic aneurysm is apparently rare. Hansmann and Schenken²⁰ found a mycotic aneurysm of a basilar artery at autopsy in a patient whose blood cultures contained *Brucella suis*.

Treatment, including the use of streptomycin and sulfadiazine, has been disappointing for no cures are reported, although Spink, et al.¹⁹ report sterile blood cultures and clinical improvement of three months duration in a patient with endocarditis associated with a *Brucella* infection. The case reported here was treated with streptomycin and sulfadiazine. Negative blood cultures after several weeks of therapy and lack of growth of the *Brucella* organism from cultures obtained from necropsy material suggests sterilization of the tissues.

Summary

An autopsied case of brucellosis with ulcerative vegetative endocarditis superimposed on a previously damaged bicuspid aortic valve and a scarred mitral valve treated with streptomycin and sulfadiazine is reported.

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General Medical Practice and the Emotional Problems of Children*

Bernard H. Hall, M.D.**

Topeka, Kansas

The physician engaged in the general practice of medicine has many advantages useful in the treatment of the emotional problems of children. Not only is such a physician usually familiar with the child, often having attended at the child's birth, but in addition, he usually knows the parents and the family home and thus, the environment within which the illness has had its genesis. Too frequently the child psychiatrist is consulted by parents only as a last resort and this physician has the particular disadvantage of not knowing the child or his parents until the time of the consultation.

The present accepted scientific knowledge indicates that in the early formative years of childhood, the stage is set for the emotional disturbances of adult life. The frustrations, conflicts, traumas and stresses of early childhood are daily reviewed in the psychiatrist's office. Recognition of the etiological nature of the individual's first years in determining his later happiness and maturity brings added responsibility to the medical profession. Not only must we be vigilant to the physical needs of the children brought to us for professional care, but also the emotional needs.

Real preventive psychiatry starts in the nursery. The diseases of infancy and childhood do not occur in a vacuum. They occur in a specific human organism who has specific emotional needs which may be frustrated as a subtle, but ever present, accompaniment to the more manifest physical illness.

The volume, *Common Sense Book of Baby and Child Care*, by Doctor Benjamin Spock of the Mayo Clinic is an excellent description of the psychiatric approach to the care of children. By specialty, Doctor Spock is not a psychiatrist but a pediatrician. However, he has long known that if one is concerned with the health of the total child, he must at the same time be both psychiatrist and pediatrician.

In our daily contact with people, we are constantly confronted with the product of an inherited biological constitution which has been forced to meet certain life stresses. What the patient says and

does is but a reflection of the life-long interplay of these two forces. Ulysses aptly described his personality in the words of Tennyson, when he said, "I am a part of all that I have met." What are the things which the child meets and which later pay dividends in human anguish? Can the youthful science of psychiatry give us conclusions which we can use as a general frame of reference in our work with children?

Psychiatry has reached certain conclusions which we can use as axioms in our care of children. One of the most significant of these has to do with the natural order of childhood. If the child is deprived of his natural sources of gratification, such as food, warmth, security and love, his emotional development will be bent accordingly.

Most physicians have always agreed that breast nursing is natural and is preferable to the artificial bottle. However, in recent years social custom, which often has had our professional approval, has ruled otherwise, and the result has been that Mrs. Jones refuses to nurse her baby. She defends her action by reminding us that women don't nurse their babies these days. The practical considerations of sterile bottles, heated formulas and all the paraphernalia involved in feeding a baby with a bottle seem to outweigh the natural convenience of the breast. The source of emotional gratification for the baby during his first months is so tied up with his eating that for him they are most likely not separated. We believe that the mother who holds her baby, and nurses him, is giving him the emotional warmth and security which is so important to him at that time.

Many pediatricians are now emphasizing the importance of feeding the child when the child is hungry and not when the clock says it is time to feed him. A venerable country doctor of horse and buggy vintage once told me that when a baby cries, he cries usually for one of three reasons. He is hungry, or he is in physical distress from a wet diaper or a sticking diaper pin, or else he needs and wants a little loving. As we learn more of the psychopathology of the most common of all neuropsychiatric disorders, namely schizophrenia, we are continually reminded of the significance of a child receiving on demand not only food but also love. Our psychiatric experience teaches us that if we can love, we can live. Does it not seem reasonable to think that the

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**Resident Physician, The Southard School, Menninger Foundation School of Psychiatry.

pattern for our ability to love may be related to the way in which we were accepted and loved as a small infant? We speak of a home as being schizophrenogenic if it is a home in which the child is continuously rejected and is not shown emotional warmth. Some writers have also spoken of the schizophrenogenic mother. I personally feel that one of the greatest mistakes of our so-called modern life is that the rocking chair no longer has its honored place in the kitchen of our homes. The good mother, that most of us knew, was a busy mother, but in between her daily tasks she held us, rocked us and in so doing gave us the love we needed on our path to maturity.

It is not easy for the baby to give up the passive dependent sort of life he leads until the time he is weaned. Therefore, the weaning process brings with it one of our first major frustrations in life. The baby can meet this frustration, in fact nature provides him at this time with his first teeth to help him switch to a different diet, but even with this aid he needs the mother's sympathetic support and understanding. If the process of weaning is too sudden, too severe, or rendered with a "must-be-done-now" attitude, the small organism may have a real problem adjusting to this frustration. Every physician knows that many of the stomach upsets, vomitings and diarrheas of the weaning period are not related to pathogenic bacteria.

Perhaps the second major frustration for the child is that of toilet training. He must be somewhat amazed to find that his parents place such a value on clean, dry pants. Here, again, he can ride the storm of this frustration if he is helped through it. Toilet training, also, should be natural. Most children will gradually train themselves, that is, if they are allowed to proceed with it in a natural manner. The child seems to gradually recognize the need for being clean and becomes so. Earlier than the second year, only the mother sees this need for cleanliness; the child certainly does not. In fact, the neuropathologists contend that myelinization is not complete until eight or nine months after birth, and thus, the child could not possibly have neuromuscular control of his sphincters until after that time. Many children who are enuretic in later years are only manifesting a symptom indicative of their reaction to the parental standards of cleanliness which were forced on them in a way which provoked this reaction.

It is interesting that an attitude which is the basis of the scientific mind, namely, curiosity, is an attribute which is often thwarted early in childhood. Between three and six, the child may be characterized by his continual, "Why?" He is going through a very important phase in which he learns about himself and differentiates himself from his environment. This curiosity is not perverse; it is natural.

Parents often make the interpretation of perversity when the child begins to ask about the socially tabooed topic of sex. The child is not born with scientific concepts of the anatomy and physiology of his genito-urinary system. He has to learn them, and therefore he asks questions, questions which are embarrassing to many parents. The child wouldn't be developing normally if he weren't curious about this part of his nature. Birds and bees stories are often an insult to the child's developing intelligence. The child is not a fool and if our answers to his sexual queries are far-fetched, he may seek his information elsewhere in the future. If we can but recognize that this curiosity is a manifestation of a need to understand himself and the rest of the world, we can do nothing else but meet this need in a practical, sensible manner. We should caution that giving the child correct sexual knowledge does not imply the necessity to give him, also, excess stimulation which will only result in later behavior problems.

Perhaps our role as a physician and its relationship to the child's development becomes most important when we see the child not for psychiatric problems but rather for a physical illness. The sick child quickly becomes the center of family attention. Not infrequently the child learns, particularly if the sickness is of several months duration, that his sickness can be used in bargaining with his parents. In addition to the natural frustrations of childhood, physical illness frequently brings other frustrations in its wake. Treatment of the child with rheumatic fever is not simply a matter of rest and sodium salicylate. The child's emotional needs go to bed with him and are equally important in his clinical management.

Surgical operations in infancy and childhood can be the source of severe maladjustment in later years. The mysteries of the operating room are unknown to the child, and his reaction of fear is but a normal one. We can reduce this fear by simple explanations and discussions and by answering the ever present questions. An ether mask is much less formidable if it has been a play-thing a few hours earlier. It is not mere chance that many children play doctor. This is one of the ways in which they learn to master their fear. If they can act out these fears and conflicts in play, they have gone far in overcoming the trauma to their personalities which may have been precipitated by a necessary surgical procedure.

Summary

In conclusion, it is to be re-emphasized that preventive psychiatry starts in the nursery. As a part of our role as physicians, we assume the responsibility of the care of the total personality which includes not only the physical but also the emotional aspects. One of the most significant ways in which we can use

prophylactic psychiatry with children is to recognize that because of their immaturity they have greater needs and that the management of the natural frustrations of childhood leaves indelible marks on the personalities of the men and women of tomorrow.

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Plasma Cell Mastitis—Report of a Case

J. E. Bleicher, M.D.*

Wichita, Kansas

Cases of plasma cell mastitis are infrequently encountered and when seen are most often diagnosed clinically as malignant disease of the breast because they so closely mimic the signs and symptoms of cancer. This disease was first brought to the fore by Adair¹ and Ewing in 1933 when they published an account of 10 cases; however, older literature describes a form of chronic mastitis that doubtless included this particular entity. The etiology of plasma cell mastitis is obscure and the age incidence varies, occurring more often in women approaching the cancer age; our case was a woman 67 years old. The acute phase of plasma cell mastitis is so mild that it rarely comes to the attention of a physician. However, the residual phase characterized by a lump in the breast together with the other indications of breast carcinoma usually brings the patient to her doctor.

Case Report

Clinical History: A 67-year-old, white, female** presented herself at St. Francis Hospital September 28, 1948, with the chief complaint of a lump in her left breast. She had become aware of its presence as she was fastening her corset three weeks prior to this admission. There was no pain or nipple

discharge observed, although the nipple had become slightly indented. It was the patient's impression that the lump had increased in size since the time that it was originally felt. Her past history was non-contributory; she did not have prior medical or surgical illnesses serious enough to require physician's care. Catamenia was normal; her last period was in 1934 and there had been no subsequent bleeding. The family and systemic histories were also non-contributory.

Physical examination revealed an apparently healthy, elderly, obese white female with a temperature of 98.0° Fahrenheit, pulse of 80 and respirations of 20 per minute. The mouth was partially edentulous and the tonsils hypertrophied. The lungs and heart were not remarkable; the blood pressure was 140/90. The left breast was pendulously large and the nipple retracted. There was slight erythema of the peri-areolar skin as compared with the opposite breast. A very hard irregularly shaped mass was felt beneath and slightly medial to the nipple. It was firmly attached to the overlying skin and it was estimated to be three cm. in diameter. No changes were noted in the right breast. The balance of the physical examination was essentially negative and the routine blood and urine studies were all normal.

Progress: at operation an elliptical incision was carried about the nipple wide enough to encompass

*Resident in Surgery, St. Francis Hospital.

**From the surgical service of Vern L. Pauley, M.D.



Figure 1. The edge of the abscess cavity showing the mass infiltration of typical plasma cells.

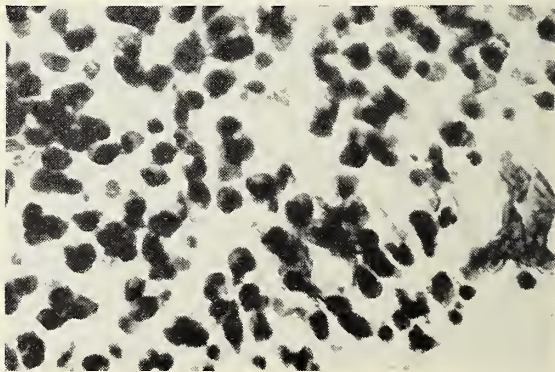


Figure 2. High-power shows plasma cells with dark, eccentrically placed nuclei.

the lesion by a wide margin and the glandular breast tissue together with the tumor were dissected free. The quick section diagnosis rendered by Dr. C. A. Hellwig was inconclusive and the surgeon was advised to close and wait. The specimen was described as an elliptical area of skin including the nipple and areola which measured seven by three cm. with attached fatty and glandular tissue 2½ cm. thick. Just beneath the skin was a dense, gritty white mass in the center of which was a small abscess-like cavity with puriform material. The paraffin microscopic sections revealed the true nature of this unusual tumor. It consisted almost entirely of plasma cells and leucocytes. Most of the cells were round, contained eccentrically placed nuclei and acidophylic cytoplasm. Under high power the nuclear chromatin was arranged in a "spoke-wheel" fashion. In the surrounding areas there was marked fibrosis and many lymphocytes were noticed about the blood vessels.

Discussion

Adair¹ and Ewing's first description divided the pathogenesis of this mastitis into an acute phase characterized by moderate pain, tenderness and heat; and a residual phase occurring a few weeks to several months later characterized by a non-tender, non-circumscribed tumor. To this may be added nipple retraction, enlarged axillary nodes, tenacious nipple discharge and the "orange peel" appearance of the

overlying skin. There appears to be no direct relationship with lactation or previous pregnancies. The main pathological finding is the marked plasma cell infiltration; there is usually a proliferation of the cells lining the ducts and occasionally the formation of giant cells which sometimes may confuse the picture with tuberculous mastitis. Cutler² states that there is no evidence that this lesion is pre-cancerous and the treatment should be simple mastectomy. Miller³ points out this condition is most often confused with cancer but a previous history of mild inflammatory changes is the most important factor in making a correct diagnosis and the histology is distinctly pathognomonic. Tuttle⁴ has called this tumor a circumscribed chronic, suppurative mastitis and has found bacteria inconsistently.

Conclusion

Plasma cell mastitis is a benign breast lesion that closely simulates cancer. The most important point in making a clinical diagnosis is the history of a mild inflammatory episode a short time before the lump was noted. It should be treated by conservative surgery.

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ROSTER TO BE PUBLISHED

In response to many requests for a list of members, the Kansas Medical Society is now preparing a roster of its membership, to be published in pamphlet form. Members of the Society will be listed in two ways, alphabetically and by cities. A copy of the roster will be mailed to all members of the Society as soon as the work is completed.

CHILD WELFARE PAGE

Hard Facts About Soft Teeth

Some questions answered about the dental problems of small children.

The teeth of a small child should not be disregarded by any physician. Very often, the doctor of medicine has the first opportunity to examine such teeth, and the advice given at the time may make a great difference in the condition of the child's mouth when he reaches school age and is brought forcefully to the attention of the doctor of dentistry. The United States has more dentists and better ones than any other country in the world, and work with children is their particular pride. Their services should be utilized.

1. Question: When should a child first be referred to a dentist?

Answer: Authorities agree that the first visit should be made at the age of three years, unless indicated sooner. If no work is needed at this time, dentist and child have at least had a chance to establish pleasant relations.

2. Question: When should a temporary tooth be repaired?

Answer: Whenever possible, as soon as possible. Besides its use in chewing, the temporary tooth reserves space for its permanent successor, and helps to keep straight the adjacent and opposing teeth.

3. Question: When should a temporary tooth in a preschool child be extracted?

Answer: When it is abscessed (as evidenced by a history of swelling or the presence of a fistulous opening) to a degree that root canal therapy is ineffective. If extraction is necessary, a space-maintaining device should be inserted. To less severely damaged teeth, the same intelligent dental attention should be given as for a permanent tooth, for the reasons mentioned in the previous answer.

4. Question: What causes early caries in infants and small children?

Answer: The causes are probably multiple. Diet is certainly important; the child with early and pronounced decay usually eats too much sugar and other refined carbohydrates. The fluoride content of drinking water definitely influences the attack rate. Lack of cod-liver oil. Mineral deficiencies, especially calcium. In some cases, probably an hereditary metabolic basis.

5. Question: Can anything be done to prevent or control caries in this age group?

Answer: Yes! The American Dental Association has given full support to topical application of sodium fluoride carried out on a definite schedule; on a mass basis this cuts the incidence of decay about 40 per cent. This, plus a good diet, plus cod-liver oil, plus good dental care, will control caries in most children. The new ammonium-containing toothpastes and powders are still experimental.

6. Question: What is malocclusion?

Answer: The state in which teeth do not meet their opposing numbers properly, because they are pushed forward, pulled back, all askew, or unduly crowded. Uncorrected, it leads to increased decay and lack of chewing efficiency and may spoil the child's appearance.

7. Question: Does thumbsucking cause malocclusion?

Answer: Yes, if the action is sufficiently forceful. Some children suck their thumb as a habit and do it infrequently; they rarely injure their teeth. Emotionally disturbed children suck compulsively, to relieve tension, and often distort the upper dental arch.

8. Question: Can enlarged adenoids cause malocclusion?

Answer: Yes. The obstruction and the abnormal position of the mouth muscles changes the shape of the upper dental arch. Such children usually show retracted eardrums and are suitable candidates for adenoidectomy (but *not* for tonsillectomy at this preschool age).

9. Question: When should correction for malocclusion be started?

Answer: The child should be referred for orthodontic care as soon as a tendency is noted. Much can be done when the jaws are plastic; dentist and child can make friends; changes over a period of time can be evaluated.

10. Question: Why do some dentists discourage dental corrections for preschool children?

Answer: Some don't like children, some can't work with them, and some are apparently too busy (and work on any child is time-consuming). The American Dental Association recommends that such dentists refer children to other dentists who *will* work on them.

11. Question: What about families that can't afford such care?

Answer: The State Board of Welfare has recently reiterated its traditional stand, that county welfare departments make dental care available for frankly indigent or "dentally" indigent children. Such care is an economy in the long run, as natural teeth are incomparably less expensive to maintain than artificial ones.

CANCER PAGE

Cancer of the Gall Bladder

Carcinoma of the gall bladder is fifth in incidence among cancers of the digestive system and predominates in females in the ratio of 4:1. The age of the patients is usually over 50 and is seldom under 40.

The symptoms are primarily those of gall bladder disease and the onset is usually insidious. Early diagnosis is almost impossible. The actual diagnosis is usually made at exploration or necropsy; it cannot, except rarely, be made by x-ray, and laboratory tests are of no help.

Gall stones probably are precursors of cancer of the gall bladder since they are present in from 65 per cent to 100 per cent of the cases of carcinoma. This close association of stones and carcinoma indicates a careful examination for cancer in any patient over 40 having gall stones, especially in women.

The treatment is complete surgical removal, but by prophylactic treatment, consisting of the removal of all gall bladders containing stones, the incidence could be greatly decreased.

The prognosis is exceedingly poor with few patients living more than a year from the time of operation.

PRESIDENT'S PAGE

Dear Doctor:

In our efforts to preserve human liberties in the field of medical care we sometimes forget that other liberties are also being threatened which other individuals and organizations are trying to preserve. In a very real sense they are fighting our battle, and we should be as vitally concerned about their problems as we are about our own.

Apparently Senate Bill No. 5, with the threat of socialized medicine, has been diverted for the time being. However, there are several other bills which might socialize us as thoroughly as the Murray, Wagner, Dingle Bill. One of these is the Brannon Agriculture Bill. It is only logical, if we do not favor socialization, that we aid in preventing passage of these bills. The Chamber of Commerce of any city is a very potent organization in preserving Americanism. Both state and local Chambers of Commerce have been very active in denouncing socialized medicine, by speaking before lay groups, distributing pamphlets, and by contacting our senators and representatives.

It appears to me that each doctor should be a member of his city Chamber of Commerce just as he should belong to his county medical society. He has much to contribute and will find this also to be beneficial to him. Just as the county and state medical societies cooperate, so do the city and state Chambers of Commerce, and it is my opinion that we, as members of the medical profession, should enlarge our sphere of interest to include the statewide programs of the Kansas State Chamber of Commerce.

The state Chamber of Commerce, with more than 2000 members, has at the time this is written exactly 14 doctors of medicine who belong. The state chamber is interested in many programs affecting health and is looking toward the medical profession for guidance in these matters. The state chamber can also advise us in many of the statewide programs the Kansas Medical Society pursues.

I wish many of us, at least 500 of us, would join the state Chamber of Commerce. The cost is only \$25 a year. The address is the Kansan Hotel, Topeka. We would find this an opportunity to come in close contact with business and professional people in all walks of life in the state, and I am sure our presence would assist in making the state chamber even more effective than it is today.

Let us all endeavor to be not only competent doctors, but effective influential citizens in our home communities. A democracy does not run itself—it must be motivated in the proper direction by the citizens. It is my belief that every doctor is in a position to be a very effective individual in keeping a democracy directed in the right channels.

Sincerely yours,

Haddon Peck, M.D.

EDITORIAL COMMENT

Blood Transfusions

Among the highlights of the American Medical Association convention at Atlantic City was a paper by Frank Lahey, M.D., Boston. Under the general heading of "Advancements in Surgery" he dealt with a variety of topics. Near the close of his presentation he spent some time warning the profession to be particularly cautious in matching blood. The use of whole blood is so prevalent in all hospitals that the average physician might forget the serious responsibility he faces in this regard. Typing procedures and the matching of blood are left to the laboratory technician, so it is of utmost importance not only that she be dependable but that the physician constantly check with the laboratory to be certain that no error has been made. The patient's life, the physician's reputation and the reputation of the hospital hang in the balance on the accuracy of laboratory technicians.

Dr. Lahey repeatedly stated that this was the most important thing he could stress. The extra precaution the physician takes in this regard may prove unnecessary over a period of years but is worth everything on that one occasion where, without this precaution, an accident might have occurred.

He stressed that immediately when a reaction is noted on the operating table blood tests should be taken and massive amounts of whole blood given. For such a case plasma is not to be used because plasma is high in salt. Even after the emergency is past the danger still is present because such patients are candidates for pneumonia and many other conditions.

Dr. Lahey ended his comment on this subject by repeating that the best treatment of all is not to let it happen.

Press Relations

The medical societies in a number of states have held press and radio conferences in an effort to express common grounds on which better cooperation may be obtained. The most recent of these was conducted by the Nebraska State Medical Association. Editors and news broadcasters as well as members of the medical profession explained some of the difficulties they are experiencing with each other.

The atmosphere was polite and friendly and the discussion was frank. There was considerable comment about reluctance on the part of physicians and hospitals to give information regarding the condition of a patient. News men reported that they

feel an obligation toward the public for giving all the information that is of interest. It serves no purpose to report that a patient is "doing as well as could be expected."

Two of the most significant points pertained to medical endorsements of products and to the announcement of new medical discoveries. News men charged both problems to the medical profession, declaring that as long as physicians are willing to permit their profession to be used as endorsement of cigarettes and soaps and other household products, the companies manufacturing those products will use such statements. With reference to the announcement of new medical discoveries editors reported that they receive those stories from the same sources that furnish them other items of information. Medicine should approach this problem on a national scale and give the newspapers of the nation accurate stories regarding scientific advancements. If that could be arranged, it would control the many instances of premature or improper announcements that physicians complain about.

A conference of this kind can bring about better understanding between the medical profession and the press, and in the case of Colorado has resulted in a contract signed and endorsed by the various organizations represented. It appears that similar work could be accomplished in this state if the Kansas Medical Society would take the initiative. The press and the radio might be invited to meet with physicians for a full, free and frank discussion of our mutual problems toward the end that both sides would have a better understanding of the difficulties involved. And, incidentally, such an understanding would ultimately be a large step toward a noticeable improvement in public relations.

A.M.A. Meeting

Attendance at the 1949 session of the American Medical Association, held at Atlantic City early in June, totaled 27,892, including 13,221 physicians. The physician attendance figure was second only to 1947's record breaking number of 15,667 at the 100th anniversary meeting.

The new president, Dr. Ernest E. Irons of Chicago, took office at this session. Other officers who will serve this year are: Dr. Elmer L. Henderson, Louisville, Kentucky, president-elect; Dr. James Francis Norton, Jersey City, vice president; Dr. George F. Lull, Chicago, secretary; Dr. Josiah J. Moore, Chicago, treasurer; Dr. F. F. Borzell, Philadelphia, speaker of the House of Delegates.

Most publicized of the actions of the House of Delegates was a step to recognize medical care plans operated by lay groups, with a provision that such plans must first have the approval of county or state medical societies. Twenty principles for approval were outlined including, among other things, stipulations that such plans must be on a non-profit basis, must comply with medical ethics, must be devoted exclusively to health service and have high quality personnel.

Plans were made for a National Health Conference to be held in the late summer or early fall to implement the A.M.A.'s 12-point health program. San Francisco was named the convention city for the 1950 meeting, Atlantic City for 1951, and Chicago for 1952. The interim session this year will be held in Washington, D. C., and next year in Denver.

Kansas was well represented at the Atlantic City meeting. Dr. Philip W. Morgan, Emporia, and Dr. John M. Porter, Concordia, were official members of the House of Delegates. The president of the state society, Dr. Haddon Peck of St. Francis, and the president-elect, Dr. F. R. Croson of Clay Center, also attended sessions of the House of Delegates. Many Kansas physicians were present at the scientific sessions.

Dr. James A. Wheeler of the Axtell Clinic, Newton, was the only individual physician from Kansas to have a display in the scientific exhibit section, an outline of his original work on equine encephalitis virus in 1941. At that time he found that the assassin bug and the mosquito were the causes of an outbreak of equine encephalitis virus in Kansas in that year, the assassin bug being responsible for the disease in its endemic form and the mosquito causing the epidemic outbreak. Fifty per cent of the typed cases were discovered to be caused by equine virus, the infection going through the lower animals with one vector and being spread in epidemic form by the mosquito vector.

Dr. Wheeler reports also on a study made by Washington University during a St. Louis epidemic in 1944. By tracing the chicken and the vector chicken mite, carried over to human beings by the mosquito, investigators found the same pattern. This study, carried out three years after Dr. Wheeler's work, agreed with his findings on the epidemic forms of this disease, affecting human beings during the months from May to freezing temperatures. Around 1948 similar work was done in Japan on Japanese B virus which strongly suggests that it too is following this pattern.

While in Atlantic City Dr. Wheeler learned that an eastern laboratory has recently found a case of western equine encephalitis in a patient who has

never left New York. It is assumed that the disease reached that area in the same manner that Rocky Mountain spotted fever reached the east coast, being brought by a tick on saddle horses or dogs. Mosquitos carrying the virus were found in South Dakota last fall, adding to the demonstration of Dr. Wheeler's report.

From a clinical standpoint there has been confusion in diagnosis in most areas because of lack of typing the virus, Dr. Wheeler says. Kansas, making a state-wide survey in 1941, was one of the first states to do so.

Kansas Division Offers Awards

Announcement of six awards to be made for scientific investigation, two each of \$500, \$300 and \$100, was made recently by the Kansas Division of the American Cancer Society. The awards will be made on a competitive basis for work in fields related to the growth, cause, diagnosis or treatment of cancer which has been done in the state.

Contestants will be divided into two groups, those who have not received a doctorate degree and those who have received a doctorate degree since June 1944. Judging will be done by a committee composed of Dr. R. E. Stowell, chairman, Dr. Ralph E. Silker, Dr. Hazel Branch, Dr. G. M. Tice, and Dr. O. R. Clark, according to an announcement by Dr. H. E. Snyder, Winfield, president of the Kansas Division.

All manuscripts should be typewritten on plain paper, using one side only, and should be submitted in triplicate. The author's name and address should not appear on the manuscript but should appear on a separate sheet of paper. Complete information may be secured from the Kansas Division, American Cancer Society, 506 New England Building, Topeka, Kansas.

Fellowships in Medicine Available

The American College of Physicians announces that a limited number of fellowships in medicine will be available from July 1, 1950 to June 30, 1951. The fellowships are designed to provide an opportunity for research training either in the basic medical sciences or in the application of these sciences to clinical investigation. Assurance must be provided that the applicant will be acceptable in the laboratory or clinic of his choice and that he will be provided with the facilities necessary for his work. The stipend will be from \$2,200 to \$3,200.

Application forms may be secured on request to the American College of Physicians, 4200 Pine Street, Philadelphia 4, Pennsylvania. Closing date for applications is October 1, 1949.

Child Health Survey in Kansas

During the war the American Academy of Pediatrics, cooperating with the United States Children's Bureau and the United States Public Health Service, decided to make a nation-wide survey of child health care. The Kansas division of the American Academy of Pediatrics, together with the medical society, through its Committee on Child Welfare, the Kansas State Board of Health, and many other agencies, cooperated. The following summary of the Kansas report is published by the *Journal* from an advance copy. The complete report will be published and available for distribution in the near future.

Eighteen different schedules were mailed to physicians, hospitals, and many other agencies in Kansas. Replies were well received, including answers from at least 80 per cent of all practicing physicians in this state. From these questionnaires more than 50 individual tabulations were prepared. These are in the form of graphs and maps and include many pages of explanatory material. The report is in three parts, the first comparing the services in Kansas with those in other states or the nation as a whole. Part 2 is a study of the services within the state, and Part 3 is a general evaluation with recommendations.

The report makes it clear that this is the first attempt of the kind ever made in the nation and therefore there are no bases for comparison. Moreover, it was done in 1946 while many physicians were displaced and services were not as readily available as they are today. However, a similar situation existed in all other states and the figures will at least be indicative if not accurate according to present facilities.

In general this study embodies the type of care given children in Kansas for a period of one day. One-seventh of the reports were made for each of the days of the week, and the study covered a period of 28 days. On that basis it was believed that a fair sampling could be obtained.

It has been officially estimated that Kansas has 464,145 children under the age of 15 years. This represents 27.3 per cent of the population and places Kansas in a tie with Iowa for 28th place in all the states of the United States. The Kansas birth rate per 1,000 population is 19.8, and the infant death rate per 1,000 live births is 34.5. On the basis of all deaths Kansas ranks fifth from the best in the United States for all states. In infant deaths it is 14th, and in maternal deaths it stands at 27th.

The report indicates that there are 14.0 children out of every thousand children in Kansas who visit a physician on any one day. The highest such figure in the United States is 22.9 and the lowest, 7.7. Kansas stands at 22nd for all states in the nation.

A large percentage of these children were seen by private physicians and most of them by general practitioners, which the report states "is as it should be." Compared with other states with reference to attendance at well child conferences, Kansas is fifth from the bottom. This state is second from the bottom with reference to attendance at clinics for physically handicapped children.

At the time this survey was made, in 1946, there were 1,128 physicians practicing in Kansas, or one for every 411 children. The national average was one physician for every 308 children. Kansas listed only 19 physicians doing 90 per cent or more of their work in the field of pediatrics. That means there was one pediatrician for 24,429 children under the age of 15 years. The national average at that time was one pediatrician for 10,299 children. Again, that means that most of the children in Kansas were cared for by family physicians doing general practice.

Kansas also had an unfavorable record with reference to public health nurses. The average for the United States shows 40.4 nurses for 100,000 children. Kansas has 25.2. The national average on home visits by public health nurses was 209.8, and for Kansas it was 64.1. In states near us only Oklahoma had less with 48.8.

Another portion of the report covered hospital care. More than 90 per cent of all births in Kansas occur in hospitals. The hospitals then were analyzed according to their deficiencies with reference to caring for children. A schedule of seven questions was asked each hospital in Kansas with reference to its pediatric units, including such things as whether graduate nurses were on duty at all times, whether trained dietitians were on the staff, and if clinical laboratory services were available. The national average shows 28 per cent of all hospitals deficient in one or more of those seven categories; the Kansas average shows a deficiency of 38 per cent. In a similar questionnaire studying deficiencies in newborn nurseries, Kansas was again below the national average. It is of interest to note that with reference to total hospital beds per 1,000 children, Kansas is better than the national average. Our state has 13.5 hospital beds per 1,000 children; the national average is 12.8. Kansas is the fifth leading state in the nation for days of hospital care for the newborn. The United States average is 8.0 days per live birth; in Kansas it is 9.4. The percentage of live births in hospitals is also better than the national average with Kansas reporting 90.3 and the national average 82.4. The report then states, "The need would then seem to be for improving quality for standards of service rather than for building hospitals, although the two are not inseparable."

Part 2 of the report compares the facilities within

the state. First is recorded the fact that 27 per cent of all children under 15 years live in metropolitan areas. Another 19 per cent live in areas adjacent to metropolitan areas. Thirty-six per cent live in isolated semi-rural areas, and 18 per cent are classified as living in isolated rural places. The profession will be interested to note that on the basis of the one-day report, corrected according to 1,128 physicians practicing in the state at that time, 13.98 per 1,000 children received medical care each day and that children in isolated areas received more medical attention than those in the metropolitan localities. Isolated areas reported a figure of 14.01 while the metropolitan and adjacent counties reported 13.53. Of the total 18.9 per cent of the medical care given was for well children. If these figures are correct, 24,000 children received care in a 25-day month.

Kansas physicians also reported on the amount of specialized pediatric training they had received. According to their replies, Kansas is placed sixth from the bottom of all states. General practitioners reported that 29.8 per cent had less than one year of hospital training. Twenty-one per cent of the physicians had less than one month of pediatrics in their hospital training and 49 per cent of the general practitioners had one month or more of pediatrics in their hospital training.

Part 3 summarizes the various facilities available in the state and makes recommendations for improvement of certain conditions. The final page of the report enumerates 20 projects in which active participation of the medical profession is requested. In some of these the profession is already actively engaged. There are some that appear to have dubious value, but for the purpose of giving an accurate summary of this report to the physicians of Kansas the 20 recommendations are listed.

1. General expansion of the medical school providing for more students and special extension of the Pediatric Department.

2. Greater utilization of postgraduate opportunities in pediatrics offered by the medical school.

3. Attraction of pediatric residents to the cities and towns of Kansas.

4. Participation in community health councils and health education workshops.

5. Support the establishment of full-time local health departments in all areas.

6. Demand and take part in well child conferences.

7. Use the public health nursing service in extending services to children and in teaching mothers' classes.

8. Make known the need for a premature program and cooperate in making it successful.

9. Participate in immunization clinics.

10. In medical care programs for children, de-

mand that hospitals be paid at a per diem cost rate or some other fair rate.

11. Encourage the establishment of proper standards of hospital care for normal newborn and premature infants. The medical staff of hospitals should insist that its own members conform with techniques established for the protection of the nursery.

12. Encourage establishment of more pediatric units and isolation units in hospitals. Every person in the medical profession should bury his own personal and community prejudices which obstruct the attainment of hospital facilities for better care of children. He should inform hospital authorities of his willingness to cooperate. He should insist on training facilities for pediatric nurses so that we can train nurses who understand the care of children.

13. Advocate openly and take pride in a medical care program similar to the one operating in Topeka.

14. Cooperate wholeheartedly and honestly with the voluntary medical and hospital insurance programs sponsored by the medical society. Be alert in seeing that these programs are flexible enough to meet the needs and desires of the persons whom they serve and who have shown by their participation that they prefer voluntary insurance systems to compulsory ones.

15. Refer child patients or ask for consultation on those about whom there are doubts. Hesitation in this matter has prejudiced many patients against the doctor.

16. Use the Pediatric Department of the University of Kansas Medical Center when necessary. It is in charge of an ethical full-time physician and it has facilities for children not available in other parts of the state. It can also be used where time-consuming diagnostic methods are needed.

17. Assume leadership in the establishment of adequate medical services for children in the state institutions.

18. Speak out about the need for guidance centers and a children's psychiatric hospital.

19. Ask for the facilities needed for treatment and rehabilitation of your own patients with cerebral palsy.

20. Assume the leadership in finding out whether children handicapped by any chronic diseases are receiving adequate medical care.

Heart Grant to K. U.

A grant to the University of Kansas Medical Center for a study of the influence of mineral deficient states on the heart and blood vessels was one of eleven research grants approximating \$50,000 recently announced by the American Heart Association. The study will be conducted by Dr. Mary C. Colglazier.

SOCIALIZED MEDICINE

Editor's Note: This is the first of a series of articles dealing with the general problem of compulsory health insurance. In this and subsequent issues of the Journal the medical profession will be given information regarding socialized medicine from which material may be drawn for talks. There will be compiled in this section factual and statistical material which it is believed will be helpful to physicians wishing authentic information on this important subject.

Of the hundreds of bills dealing with medical subjects currently before the 81st Congress, many are concerned with the cost and the distribution of medical care. Among these three are most frequently mentioned because they illustrate the three major schools of thought on this subject. They are not entirely similar but each contains the foundation for federal domination of medical care.

S. 1456 was introduced by Senator Lister Hill and others and is known as the Voluntary Health Insurance Act. It proposes to make federal appropriations to states to supply hospital and medical care to those persons financially unable to pay all of those expenses. Other items are included such as appropriations for state surveys to determine medical needs, financial assistance to attract doctors into areas unable to support a physician, etc. Primarily, however, the bill states that these funds may be used on a state basis to pay subscription rates in voluntary non-profit prepaid plans for those who cannot afford to pay those costs themselves.

Among the objections may be noted the following: the Federal Security administrator, and under him the Surgeon General of the United States Public Health Service, shall administer this program, a veritable army of employees will be required to certify those eligible for this type of assistance, and under this program many small insurance companies listing themselves as non-profit corporations could spring up to cause a variety of problems. It is only natural that the various states would be required to conform to the national pattern, and from that beginning increasing federal control might result.

S. 1581 was introduced by Senator Taft and others and is known as the National Health Act of 1949. This bill proposes federal appropriations to the states for hospital construction, for surveys, for increased medical education, etc. This bill would create a National Health Agency with a doctor of medicine at its head and states that at least 75 per cent of the money must be spent in the payment of premiums to voluntary non-profit health insurance plans.

Except for the creation of the National Health Agency, the major difference between this and the Hill bill is in the matter of language. The Taft bill declares that federal control shall not be exercised, but it appears that the machinery for federal control is as surely set up in this bill as in the other. Again, a single state agency is to be designated in each state as the sole distributor of this fund, and since all programs must be coordinated on a national level it is only natural that many federal employees and many records will need to be obtained for the operation of this program.

S. 1679 was introduced by Senators Thomas, Murray, Wagner, Pepper and others. This is cited as the National Health Insurance and Public Health Act. In its printed form it contains 163 pages, and it is popularly known as the administration bill. Included are many items such as payments to medical schools, medical research, hospital survey and construction, etc. Most important, however, is the compulsory tax feature whereby the social security tax is being expanded to create a fund entitled the Personal Health Services Account, from which physicians, hospitals, dentists, nurses and pharmacists would be paid for all services rendered under the general heading of medical care. The program is to be administered by the Federal Security administrator and will be strictly controlled on the federal level. In general, it will change the system of medical care in this country to approximately that currently experienced in England.

The terms of this bill have been sufficiently publicized so that they need not be enumerated here. A few points might be re-emphasized, however. One is that even the sponsors of this bill have no illusions to the effect that the expanded social security tax will pay the cost. On Page 148 under Part 2, entitled Fiscal Provisions, is the statement that the administrator may draw directly from the Treasurer of the United States "any further funds required to meet expenditures to carry out this title." The bill speaks eloquently about the free choice of physician and in a rhetorical introduction entitled Declaration of Purpose the bill laments the "shattering cost of serious or chronic illness"... "a critical shortage of physicians"... "the development of research on a scale appallingly inadequate in relation to the dreadful cost of disease"... and "a serious maldistribution of both personnel and facilities so that some areas are disproportionately supplied in relation to others which suffer from an almost total lack of decent medical care."

"Because a medical dole as an answer to this problem is repugnant to the American people and would certainly result in a system of state medicine paid for from tax funds and rendered by regimented doc-

tors, the Congress declares the purposes of this act to be" to relieve the physician shortage, to learn more of the cause, cure and prevention of diseases, to give more medical care to rural areas, to expand the public health program and to provide "a sound economic foundation for our free system of medicine and to correct the maldistribution of health personnel and facilities by establishing a system of Prepaid Personal Health Insurance on the principle of social insurance." The bill goes on to declare that these benefits shall be the right of Americans as free men and not as charity, that professional ethics shall be fully upheld and that in the administration the American plan of decentralization shall be safeguarded.

All that is in the introduction, which is entirely inconsistent with the provisions of the bill itself. The enactment of this bill would certainly regiment the medical profession to make government clerks out of the doctors and the patients vassals of the state. The expense could threaten the American economic system, and in the employment of a tremendous army of aides to administer this program the most devastatingly powerful federal bureau of all times would be created.

Additional information on any of these bills may be obtained through the Executive Office.

Board Examinations to 128

The largest class of medical students ever to apply for licensure in Kansas, 128 young men and women, were examined June 1 and 2 by the Kansas State Board of Medical Registration and Examination in Kansas City, Kansas. Eighty-two of the group, including eight young women, were from the University of Kansas School of Medicine. Thirty-five had applied for license by reciprocity, indicating that the Kansas rural health plan has received nation-wide recognition. Forty-six of the young physicians reported immediate plans to open offices in small Kansas towns.

Kansas Academy Announces Committees

Members of the committees of the Kansas Academy of Medicine were announced recently by the president, Dr. L. B. Gloyne, Kansas City. They are as follows:

Membership and Ethics—Dr. Clyde Miller, Wichita; Dr. A. W. Fegtly, Wichita; Dr. Conrad M. Barnes, Seneca; Dr. Charles White, Great Bend, Dr. E. R. Millis, Kansas City.

Education—Dr. L. A. Donnell, Wichita; Dr. C. L. Scuka, Wichita; Dr. D. L. Evans, Manhattan; Dr. H. O. Williams, Cheney; Dr. E. J. Grosdidier, Kansas City.

Medical Coordination and Hospitals—Dr. Lawrence Leigh, Overland Park; Dr. L. A. Donnell,

Wichita; Dr. A. H. Baum, Stockton; Dr. L. K. Nix, Wichita; Dr. L. V. Turgeon, Topeka.

Programs—Dr. William Brewer, Hays; Dr. L. P. Randles, Fort Scott; Dr. Lynn Beal, Fredonia; Dr. Lee Rook, Kansas City; Dr. A. W. Fegtly, Wichita.

Auditing—Dr. C. W. Bowen, Topeka; Dr. Agnes Robbins, Kansas City; Dr. G. G. Whitley, Douglass.

Constitution and By-Laws—Dr. A. W. Fegtly, Wichita; Dr. Harry Last, Leon; Dr. A. R. Chambers, Iola; Dr. J. K. Wisdom, Wichita.

The executive committee of the Kansas Academy of Medicine will meet early this fall in Emporia. It is planned that all general practitioners in that district will be invited to attend.

Osteopath Case Completed

On June 2, 1949, the osteopath case came to a close. This litigation filed against the governor and the attorney general of Kansas, first by a small group of osteopaths and later amended to include all osteopaths in Kansas, before a special three-judge federal court, has been pending for several years. Earlier this spring a unanimous decision was handed down upholding the Kansas statute and the Kansas Supreme Court rulings limiting osteopathy. Following that decision the plaintiffs had a period of 90 days in which to appeal to the Supreme Court of the United States but as of June 2, having failed to do so, they have no further recourse before the law and this particular action is ended.

Grant for Cancer Research

The University of Kansas Medical Center is one of two medical schools receiving grants from the National Cancer Institute for a search for an accurate cancer diagnostic test, according to a recent release from the Federal Security Agency. Dr. R. E. Stowell and Dr. J. H. Hill, now engaged in the work at the Medical Center, were named as recipients of a fund of \$15,660 for the work.

Many laboratory tests for cancer have been reported, but many of these have proven unreliable. The others, which may be of value, have not been sufficiently tested, so the purpose of the project will be to evaluate a number of reported cancer diagnostic tests and develop those which appear most promising. The work being done in Kansas will be coordinated with other work being done at the University of Tennessee College of Medicine under a similar grant and a University of Washington project already under way.

Tests to be studied at the three institutions include the recently reported Huggins iodoacetate index test, Black plasma coagulation tests, Black dye reduction test, cholinesterase test, Roffo neutral red test, Munro protective colloid test and Bendion colloidal vanadate test.

ACTIVITIES OF MEMBERS

Dr. Roger E. Phillips, formerly of Winter VA hospital, Topeka, has gone to Orlando, Florida, and is now in private practice there.

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Dr. D. D. Carr, Topeka, city-county health officer, resigned that position last month to accept a similar position in Las Vegas, Nevada. Dr. Harle Barrett, assistant health officer at Topeka, is directing the unit until a successor to Dr. Carr is appointed.

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Dr. T. C. Kimble, who has practiced in Miltonvale for 41 years, was guest of honor at a community party May 23, his 73rd birthday anniversary.

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Dr. Richard L. Sutton, Jr., Kansas City, became chairman of the Department of Dermatology at the University of Kansas School of Medicine July 1, succeeding Dr. Charles C. Dennie, who has reached the retirement age for university executives. Dr. Dennie has been a member of the faculty for 32 years and chairman of his department for 10 years.

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Dr. Robert L. Worthington, medical director of the hospital division of the Menninger Foundation, Topeka, since 1942, went to Seattle last month to accept a position on the staff of the Northwest Clinic. Dr. Lewis L. Robbins, director of the outpatient division at the Menninger Foundation, is taking over responsibilities for the hospital division.

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Dr. L. A. Calkins, head of the department of obstetrics and gynecology at the University of Kansas School of Medicine, was one of the speakers at the A.M.A. scientific session at Atlantic City last month. Dr. Calkins is chairman of the A.M.A.'s section on obstetrics and gynecology this year.

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Dr. Arnold H. Baum, formerly of Stockton, has moved to Dodge City and is now practicing there.

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Dr. Conrad M. Barnes, Seneca, spoke on Blue Shield and rural health problems at a meeting of the Marysville Rotary Club last month.

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Dr. E. K. Lawrence, Hiawatha, was elected department commander of the Kansas United Spanish War Veterans at the annual encampment at Emporia last month.

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Dr. J. A. Farley, Topeka, resigned last month as physician at the Topeka Santa Fe Hospital after having served in that capacity since 1912.

Dr. C. M. Newman, Axtell, was honored by his community last month on the occasion of his retirement after 40 years of practice there. He announced that Dr. V. J. Vaughn of Lincoln, Nebraska, will take over his practice in Axtell.

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Dr. Charles C. Dennie, professor of dermatology at the University of Kansas School of Medicine, has been named president of the American Dermatological Association.

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Dr. Eugene D. Liddy, who has been practicing in Lawrence during the past 10 years, has moved to Sarasota, Florida, and is now practicing there.

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Dr. J. E. Hodgson, Downs, celebrated his 50th anniversary in the practice of medicine last month. Approximately 1000 people attended a community dinner in his honor.

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Dr. M. C. Ruble, Parsons, was elected president of the Kansas City Urological Society at the annual meeting of that group in May.

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Dr. M. B. Flowers, Anthony, announces that Dr. Donald C. Muir, formerly of Greensburg, Pennsylvania, is now associated with him in practice.

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Dr. John B. Dixon has returned to his practice at the Parsons Clinic after an absence of eight months while he took postgraduate work at Washington University, St. Louis.

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Dr. Charles F. Taylor, Norton, was named governor of the American College of Chest Physicians for the state of Kansas at the annual meeting of the college in Atlantic City early in June.

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Dr. Michael L. Furcolow, Kansas City, presented a paper, "Practical Results of Recent Research in Histoplasmosis," at the meeting of the American College of Chest Physicians in Atlantic City last month.

To Review Health Bills

A newly appointed committee of the American Medical Association will meet soon to review and study all types of health bills introduced in Congress, with a hope of coordinating the medical profession's views relating to all legislation. Special attention will be given all types of federal regulations which pertain to medical care. Serving on the committee from this section of the country are Dr. James R. McVay, Kansas City, and Dr. R. B. Robbins, Camden, Arkansas.

COUNTY SOCIETIES

The Reno County Medical Society met in Hutchinson at the Gables Tearoom on May 27. Dr. Had-don Peck of St. Francis, president of the state society, was guest speaker.

A second meeting of the society was a joint session with the staff of Grace Hospital, Hutchinson, on June 2. Dr. G. A. Chickering, Hutchinson, presented a study on electrocardiographic and x-ray signs of hypertension. Dr. William Brownlee, Hutchinson, was accepted as an active member of the society, and Dr. M. S. Thacher of Turon and Dr. W. H. Bauer of Sylvia were made honorary members.

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A meeting of the Nemaha County Society was held at Centralia May 24, and the doctors and their wives were guests of Dr. and Mrs. R. E. Capsey at dinner. New officers of the society are: president, Dr. C. M. Barnes; vice president, Dr. R. E. Capsey; secretary treasurer, Dr. A. H. Haynes.

The Kansas Society of Pathologists announces that it will furnish speakers for scientific programs at county society meetings, beginning this fall. The speakers will present papers on numerous topics, all pathological. Complete information on speakers and topics may be secured from A. A. Fink, M.D., secretary, Kansas Society of Pathologists, 618 Mills Building, Topeka, Kansas.

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The Nemaha County Medical Society became the first in Kansas to insist on continuing education for its members when it voted recently to require a minimum of five days postgraduate work each year by each member. Credit will be given for attendance at scientific meetings, circuit courses, and formal work at medical schools. Those failing to complete the required amount of study will be dropped from membership.

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The regular meeting of the Washington County Society was held June 21. Dr. John M. Porter, Concordia, was guest speaker. The society will not meet during the summer months and has scheduled its next meeting for September 9.

DEATH NOTICES

FREDERIC WILHELM HALL, M.D.

Dr. F. W. Hall, 37, who practiced at the Snyder-Jones Clinic in Winfield until he moved to Ponca City early this year, died at his home there May 21. A graduate of the University of Kansas School of Medicine in 1936, Dr. Hall joined the Winfield clinic in 1939, leaving there during the war to spend four and a half years in the Army. He was an active member of the Cowley County Medical Society, an associate member of the American College of Physicians and a diplomate of the American Board of Internal Medicine.

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GUY LEROY MILLINGTON, M.D.

Dr. G. L. Millington, 70, who had practiced in Sumner and Crawford Counties since 1901, died May 16 after an illness of three years. He had served as health officer in both counties and at one time was a member of the Kansas State Board of Medical Registration and Examination. After graduating from the Homeopathic Medical College of Missouri, at St. Louis, in 1900, he opened an office in Sumner County and moved to Girard 19 years later, continuing to practice there until his death.

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FRED D. BATY, M.D.

Dr. F. D. Baty, a member of the Meade-

Seward Medical Society, died May 8 at Ruth, Nevada, where he had gone earlier this year to serve as physician for a mining company. He was graduated from the University of Kansas School of Medicine in 1940 and received his Kansas license in 1941. He practiced first at Stirling City, California, and later opened an office in Liberal, moving to Elkhart in 1946.

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FREDERICK SEARS HAWES, M.D.

Dr. F. S. Hawes, 76, a physician in Russell County since 1902, died in a Russell hospital June 14. He was a graduate of the Gross Medical College, Denver. He had practiced continuously in Russell, specializing in ear, nose and throat work, except for an interval during World War I when he served as a transport surgeon.

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DAVID E. GREEN, M.D.

Dr. D. E. Green, 80, a physician at Pleasanton for more than 50 years, died June 20 at a Fort Scott hospital a day after the death of his wife. He was an honorary member of the Linn County Medical Society, and had been practicing in Pleasanton since his graduation from the University Medical College of Kansas City in 1895.

Case Reports From The University of Kansas Medical Center*

Cancer Conference

Edited by R. E. Stowell, M.D., and E. B. Taft, M.D.

Dr. Schafer: These four cases of carcinoma of the lung were all diagnostic problems. Following the presentation of the case histories and roentgenological and pathological findings, they will be discussed as a group.

Tumor Clinic Case No. 49-6

History: F. W., a 40-year-old white woman, was admitted to the University of Kansas Medical Center on December 28, 1948, with a history of unexplained atelectasis of the lower lobe of the right lung. Early in July, 1948, the patient developed a severe respiratory infection which required 10 days hospitalization. Following this episode she was troubled by a persistent cough. She noticed increasing fatigability and one month prior to admission developed a second severe respiratory infection which also necessitated hospitalization. Roentgenograms had been made on numerous occasions during the course of her illness.

Physical Examination: The patient appeared chronically ill and was obviously troubled by a non-productive cough. There was decreased chest excursion on the right with dullness to percussion and increased vocal fremitus over the posterior lower part. Breath sounds were absent in this area; no rales or ronchi were heard. The left chest was clear to percussion and auscultation.

Laboratory Studies: Analyses of urine and blood were within normal limits.

Roentgenological Studies: A chest film in June, 1948, showed segmental atelectasis in the lower lobe of the right lung. A month later there was less density suggesting that the obstructed segment had cleared in the interim. Anterior-posterior and lateral films taken in December prior to admission showed a similar area of density which was posterior and delineated in part by the main interlobar fissure. Bronchograms taken after admission showed complete obstruction of the bronchus of the lower lobe of the right lung. The carina and bronchus of the upper lobe were well filled with lipiodol.

Course: The patient was bronchoscoped and a fungating mass projecting upward from the lower lobe bronchus was biopsied. On January 12, thoracotomy revealed extension of the tumor mass into the inferior pulmonary ligament with involvement of the inferior pulmonary vein. The lower lobe was consolidated and appeared to contain subpleural tumor. Pneumonectomy was not considered technically feasible nor therapeutically advisable.

Dr. Tice: The roentgenograms show the two most common lesions seen in bronchogenic carcinoma: first atelectasis and then actual demonstration by radio-opaque media of the point of bronchial obstruction. Atelectasis can usually be differentiated from other forms of consolidation, if the segment involved is large enough, by the displacement of the mediastinum toward the area of density and elevation of the diaphragm on that side.

Dr. Helwig: The biopsy from the bronchus shows, infiltrating through the submucosal connective tissue, clusters of small undifferentiated cells with dense nuclei typical of those called "oat cell carcinoma." The biopsy of lung parenchyma shows no tumor. There is only extensive fibrosis with minute abscesses and evidence of lipid pneumonitis.

Tumor Clinic Case No. 49-7

History: A. M., a 43-year-old white man, was admitted to the University Medical Center in December, 1948, with the chief complaint of pain in the left chest. In March, 1948, the patient accidentally fell while working and injured his left upper chest. On the day of injury he first coughed up a small amount of blood stained mucus which he associated with his injury. Subsequently he noticed pain of increasing severity in his left upper chest and shoulder. He also began to cough more constantly and frequently brought up small amounts of blood-stained sputum. He lost 20 pounds of weight. During the month before admission the pain was almost constant and had begun to radiate over the mid-chest. Change in position frequently caused exacerbation of the pain. Roentgenograms revealed infiltration at the left apex which had been interpreted as possible tuberculosis, though many sputum examinations had failed to reveal the presence of acid fast bacilli.

Physical Examination: The patient appeared well developed but thin and chronically ill. There were no palpable lymph nodes. The chest was symmetrical with equal expansion and was clear to percussion and auscultation. There was hyperesthesia of the skin over the left scapula, but no atrophy.

Laboratory Studies: Urine analyses and complete blood counts were within normal limits. Wasserman, Kahn and histoplasmin tests were positive. Sputum examinations for acid fast bacilli and tuberculin test were negative.

Roentgenological Studies: Initial films showed a diffuse opacity of the apex of the left upper lobe with some mottled infiltration extending from the

*Cancer teaching activities aided by a grant from the National Cancer Institute.

hilus which was thought consistent with tuberculosis. A film taken one month later revealed little change. A lateral film showed that the lesion was largely posterior in location. A Buckey film taken at this time showed erosion of the third dorsal vertebral body, replacement of the pedicle of the fourth and erosion of the associated ribs.

Course: A needle biopsy of the tumor was done. Since the tumor extensively involved bone, thoracotomy was not advised. The patient was given a short course of nitrogen mustard therapy and dismissed without much improvement.

Dr. Tice: This case shows the difficulty encountered at times in the roentgenological differential diagnosis of tumor and tuberculosis. That this patient had a malignant tumor, probably a type of superior sulcus tumor, was obvious from the Buckey film.

Dr. Helwig: The biopsy shows many large anaplastic cells with hyperchromatic nuclei embedded in blood clot. In spite of the fact that there is no stromal relationship, I think that these cells are definitely those of a malignant tumor, but of what type, I cannot say.

Tumor Clinic Case No. 49-8

History: R. P., a 55-year-old white man, entered the University Medical Center in January, 1949, with the chief complaint of pain and swelling of his feet and ankles. He had further complaints of pain in the epigastrium for 10 years, spitting up blood for four years and a weight loss of 20 pounds in the last five years. The patient had been having epigastric pain and burning, relieved by food and alkali and not associated with hemoptysis, vomiting or tarry stools. Apparently the distress had never

been severe enough for him to request medical attention. During the past five years the patient had had night sweats and shortness of breath and a productive cough, with blood-streaked sputum for four years. Each year he had 35 mm. photofluoroscopic films of his chest which had been reported negative. A recent film showed a "spot" on his lung and hospitalization was advised. Six weeks prior to admission the patient was given penicillin in oil. The following day his ankles and knees became painful and his ankles swollen. He gave a history of having received penicillin two years prior to admission with subsequent edema.

Physical Examination: The patient was of asthenic habitus but except for tender pitting edema of the ankles had no positive physical findings.

Laboratory Studies: Urine analyses, complete blood counts and routine blood chemistries were within normal limits. Tuberculin test was positive. His sputum contained no acid fast bacilli. Erythrocyte sedimentation rate was 21 mm. in 60 minutes.

Roentgenological Studies: Chest films revealed a solitary circumscribed area of density in the upper lobe of the left lung which was sharply delineated from the lung except at the apex where there were changes suggesting atelectasis. A lateral film showed that the mass was situated rather far anteriorly. A bronchogram did not reveal any obstruction of the main bronchi. Laminagrams showed that there was a space in the center of the mass in which there is a definite fluid level.

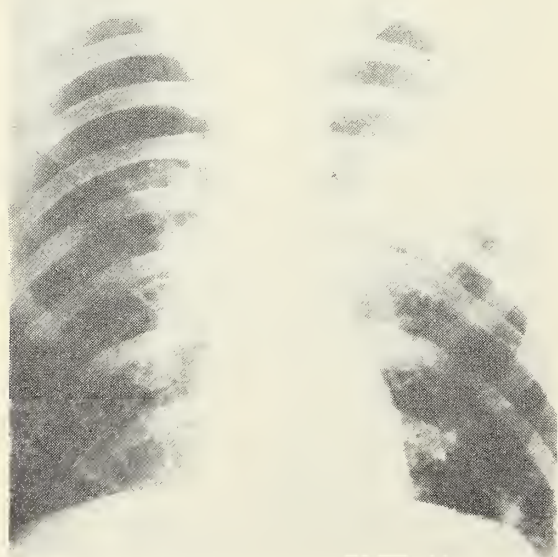
Course: Bronchoscopy examination did not reveal endobronchial disease.

Dr. Tice: Here again the differential diagnosis lies between a tumor and tuberculosis. In a way the problem is similar to looking at a lesion on the penis and deciding that it is a chancre and not a carcinoma because the patient has a positive Wasserman. Because of the patient's age I should put carcinoma as the most likely possibility. Just because there is a cavity in the lesion does not mean that it is necessarily a tuberculoma; I have seen several primary and secondary carcinomas in the lung with cavitation by x-ray.

Dr. Helwig: The only specimen we have at present from this patient shows bronchial mucosa without evidence of tumor or inflammation.

Tumor Clinic Case No. 49-10

History: E. McD., a 62-year-old Negro man, was admitted to the University of Kansas Medical Center on October 4, 1948, with the chief complaints of cough and weight loss during the previous eight months. The cough became productive of mucoid nonpurulent sputum which during the month before admission was occasionally blood streaked. He had pain in the right posterior chest for which he was given medicine without relief of pain or sputum.



Roentgenogram of the chest of Case No. 49-8.

He had lost 30 pounds in weight but had noted no weakness. Exertion caused mild dyspnea and increased cough.

Physical Examination: The patient was well developed but poorly nourished. There was good respiratory excursion. Dullness to percussion was present posteriorly from the sixth to the eighth vertebrae on the right. Breath sounds were decreased over this area. Except for clubbing of the fingers there were no other positive physical findings.

Laboratory Studies: The results of urine and blood studies were normal.

Roentgenological Studies: Roentgenograms of the chest showed a large rounded mass in the posterior portion of the right lower lung field adjacent to the thoracic vertebrae. Bronchograms revealed anterior and slight lateral displacement of the major bronchi to the right lower lobe. Roentgenological studies of the upper gastro-intestinal tract were negative.

Course: Bronchoscopic examination revealed findings consistent with extrabronchial compression on the right. On October 7 at exploratory thoracotomy a large tumor mass filled the right lower lobe and extended into the upper lobe and adjacent mediastinum. A biopsy was taken but resection was thought inadvisable. The patient's postoperative course was uncomplicated and he was dismissed on the 13th postoperative day to be followed as an outpatient.

Dr. Tice: In view of the operative and pathological findings this patient's roentgenograms are of considerable interest. They might be said to be "classical" films of a mass extrinsic to the lung as seen in neurofibromas of the posterior mediastinum.

Dr. Helwig: Again the bronchial biopsy was negative. In the biopsy from the tumor mass taken at thoracotomy, are sharply outlined masses of epidermoid carcinoma. The central part of each clump of tumor cells has been converted to pink-staining necrotic debris. Such marked necrosis occurs in some carcinomas. At times such necrotic material is expectorated by the patient with resultant cavity formation.

Discussion of Cases

Dr. Schafer: I should like to discuss the overall problem, the patient's prognosis. With carcinoma of the lung we have had deplorable results so far. A recent review of 200 cases which had been examined by Lindskog and Bloomer¹ showed that 61 per cent of patients with carcinoma of the lung were inoperable when first seen. Of the ones operated upon five patients were considered to be potential candidates for survival. Furthermore, I doubt that any clinic in this country can honestly claim an overall cure rate exceeding five per cent. There must obviously be reasons for these poor results. In the first place we are dealing with a tumor which has

no specific symptoms. The patients cough; they have pain; they have shortness of breath. But, at the age when this type of tumor most commonly occurs, many of us will have a chronic cough. Thus the occurrence of cough is initially dismissed by the patient and subsequently by the doctor who is apt to disregard it for a considerable period and not employ specific diagnostic measures. Consider the histories presented here.

The first patient, a woman in her early forties, for at least six months had symptoms which certainly warranted precise evaluation. When a biopsy was finally obtained, it revealed an anaplastic tumor so that the probabilities are great that even had she had a radical resection when first seen, we might not have succeeded in removing her tumor. However, she could well have had a differentiated tumor. One cannot have any idea from the appearance of the roentgenogram as to the type of tumor cells present. Unfortunately we do not have many chances to find out whether such patients might be cured since we usually see them only after some such sequence of events. This woman was hospitalized on two occasions prior to coming here; thus she was in circumstances most favorable for establishing a diagnosis by specific tests and yet these were not done. Apparently



Laminogram of the upper lobe of the left lung, Case No. 49-8.

the respiratory infections which necessitated her hospitalization were considered non-specific in character, and yet one of the most common results of obstruction of a bronchus with pooling of secretions behind the obstruction is secondary infection with systemic reaction such as occurred in this patient.

The second patient presents a type of tumor which probably rarely will be cured by surgical means. It probably arose in the periphery of the lung and caused the patient no difficulty. Coincidentally, he sustained an injury to the area in which the tumor was subsequently found, but that trauma was not related to the underlying process. Tumors of this type in the periphery of the lung, away from the main airways, do not usually cause symptoms until the process is hopelessly advanced. The tumor in this case behaved in typical fashion. It extended through the parietal pleura with destruction of the bones of the thoracic cage and of the spinal column. This type of patient is a lost soul from the beginning and until we have some entirely different approach to the subject of tumor therapy, we shall have little to offer to such patients. Nitrogen mustard therapy was tried in this patient in the hopes that some temporary palliation might be obtained.² Fortunately only about one-fourth of all cancers of the lung arise in such silent locations.

The last patient had roentgenological findings which were almost pathognomonic for a neurogenic tumor and yet from the beginning his main symptom was cough, cough productive of mucoid and recently of blood-streaked sputum. We discounted this because we felt that it could be merely a manifestation of bronchial obstruction and mild chronic bronchitis. We were obviously wrong. However, in other comparable cases I think that the diagnosis of neurogenic tumor would be correct nine times out of ten. But it is certainly a valuable experience to encounter such an exceptional case and to know that these peripheral tumors of the lung can be almost asymptomatic and yet reach such giant proportions.

The third patient, on whom we as yet have no positive diagnosis, presents a sharply circumscribed lesion. With such a lesion, whether the patient has symptoms or not, one must always think of the possibility of primary carcinoma. Even if one takes all age groups, 40 per cent of all such sharply circumscribed masses in the lung are primary carcinomas. If one considers only those in the cancer age group, such as this patient, the incidence increases greatly. This lesion, I believe, can only be diagnosed with certainty by exploratory thoracotomy and if possible with resection. It might be a tuberculoma; it might be a metastatic tumor; it might be a non-specific abscess or an infected cyst. However, we have a history that this man has had yearly x-rays which did not reveal any lesion until recently. It

seems unlikely to me that this is tuberculous in origin, for since a cavity is present, it is difficult to see how repeated sputum examinations could be negative. The fact that tumors may form cavities has already been mentioned. Such cavities may become infected and produce purulent sputum of the sort coughed up by this patient. Thus at operation I think that this patient will be found to have a tumor.*

Again may I say that I think time is the most important factor in all these histories. As long as we continue to wait for six months or a year before patients are submitted to specific diagnostic procedures, we shall continue to save almost none of them. And until the time comes when we are willing to be suspicious early, probably the work of the thoracic surgeon with such patients is largely a waste of energy. It is true that palliation is obtained, particularly in those individuals with sepsis.

Dr. Tice: What is being done with the Papanicolaou stain here? The third case for instance should be ideal for such a type of examination.

Dr. Wahl: We are trying this diagnostic procedure in some cases, especially in those in which we can compare the smears with biopsies. Many have not been too satisfactory in our hands. I do not recall whether such a smear was examined from this patient or not.

Dr. Schafer: I do not believe one was taken. However, I think that this diagnostic aid deserves some discussion. There have been series³ reported in which as many as 73 per cent diagnoses have been made by the examination of sputum from patients suspected of having pulmonary tumors. Other reports have not been as favorable. We are just beginning such a study of sputum from our patients, but it is too early to comment on its accuracy.

Dr. Boley: Will you collect bronchial secretions from this patient? I believe these are more satisfactory to examine than sputum.

Dr. Schafer: We have been examining bronchial washings obtained at bronchoscopy as well as sputum.

Dr. Clark: How often do we see women with carcinoma of the lung? The first patient today is the only one I have seen recently.

Dr. Schafer: We have had a number of women with carcinoma of the lung but in our series as elsewhere, it is eight times more frequent in men.

Dr. Orr: I think that the lesson in surgery to be learned from this discussion is that carcinoma of the lung is one of the most common carcinomas. We

*At subsequent thoracotomy the upper lobe of the left lung was resected with some of the hilar lymph nodes. An adenocarcinoma with areas of squamous metaplasia and necrosis was present. The regional lymph nodes were not involved. The patient died on his tenth postoperative day and at autopsy no other tumor was found.

must be on the lookout for it at all times. As Goethe said, "Was man weiss, sieht man." At present if we do not diagnose such lesions early, we have little to offer even in most favorable cases. In patients with pulmonary cancer suitable for surgical treatment, (at present only about 35 per cent are in this category) Graham reports eight per cent surgical mortality and 30 per cent five-year survivals.⁴ Perhaps in the future when we have earlier diagnosis or specific therapy for cancer the situation will be much improved.

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ABSTRACTS FROM CURRENT LITERATURE

Sex Hormones in Cancer

The Use of Sex Hormones in Cancer. By E. Perry McCullogh. *Cleveland Clinic Quarterly*, 12:1, 21:32, January, 1949.

The statement is made that the use of sex hormones constitutes a promising form of chemotherapy in malignancy. The treatment is palliative, and is dangerous in improperly selected cases. The work of Adair, Farrow, Nothanson, Huggins, Vest, Haddow, and Fergusson is considered in this analysis.

Castration as an adjunct to treatment of breast cancer was suggested as early as 1886. According to Adair, transient benefit may be expected in 15 per cent to 30 per cent of castrated patients with advanced, recurrent, or metastatic disease, and almost entirely in the premenopausal age group. The primary tumor and lymph gland metastases are usually not helped. X-ray castration may produce good results.

The use of estrogens in breast cancer resulted from the discovery that certain carcinogenic hydrocarbons influenced the growth of experimental malignant lesions. Haddow reported results in 73 cases treated with triphenyl cloethylene, triphenylmethylethylene, and stilbestrol, all estrogens. With trichlorophenylethylene there was improvement in 10 of 22 patients, and with stilbestrol, improvement in five of 14 patients treated. Ten British observers reported on 168 patients treated with stilbestrol. Of 100 patients under 60, only 15 improved. Of 68 patients over 60, 47 improved.

Dosage of stilbestrol varied from five to 30 mg. per day.

Good results from this therapy include regression of the primary tumor, of soft tissue recurrence, and of lymph gland and pulmonary metastases. Pain from skeletal metastases may be relieved.

The chief danger of estrogen therapy is acceleration of growth in younger women. Any patient who still menstruates or who has menstruated within five years should definitely not receive estrogen therapy. Undesirable side effects of therapy include gastrointestinal disturbances, edema, and menorrhagia.

Estrogens may be considered useful palliative agents in soft tissue manifestations of advanced cancer of the breast in some older women.

In general, androgens in the treatment of cancer of the breast are most useful in younger women and in those who have skeletal metastases. Results of treatment are highly variable, and in a few instances the disease seems to be accelerated by treatment. In some the relief of pain and recalcification in skeletal metastases is dramatic. Of 20 patients treated by the author, nine improved. Dosage was comparatively small at first, later 50 to 100 mg. daily. Rise in serum alkaline phosphatase suggests healing of bony lesions.

Weight gain may be an undesirable effect of androgen therapy. Nausea, headache and malaise suggest hypercalcemia, and serum calcium levels should be followed in these cases. Deepening of the voice, acne, beard growth, and increased sexual libido may occur.

Treves reported good results in six of seven cases following castration for carcinoma of the male breast.

Orchiectomy has become a popular method of treatment for inoperable carcinoma of the prostate. Vest compared the six-year survival in two groups of 74 patients, one having castration, and the other not. The total dead in the noncastration group is 82 per cent, while the total dead in the castration group is 43 per cent.

Following castration, gonadotropins rise to high levels, estrogens fall, and 17-ketosteroids, after an initial fall, tend to rise above pretreatment levels. This suggests an increase in adrenal androgens, and may be connected with the common exacerbation which occurs. No such rise may occur after estrogen therapy under similar circumstances.

Estrogens are increasingly popular in the treatment of inoperable prostatic cancer. The author suggests dosage of five or six mg. per day. Results are favorable, but are palliative and, of course, temporary. Untoward effects may include nausea, vomiting, impotence and gynecostomia.—E.J.R.

Temperature and Wound Healing

Experimental and Clinical Studies of Reduced Temperatures in Injury and Repair in Man—Effect of Moderate Cold and Refrigeration of Human Skin. By Martin A. Entin, Hamilton Baxter and Robert H. Moore. *Quarterly Review of Surgery*, 5, 551, November, 1948.

In a clinical and experimental study of the effects of reduced temperature upon human tissues, particularly with regard to the rate of epithelialization and fibrous tissue formation, five experiments were performed on healthy adults between ages of 17 and 28 years.

The duration of cooling varied from three to 13 days, and the temperatures of exposure extended from 53 to 82 F. Uniform thickness of skin was removed from symmetrical areas of both thighs, one as a control and the other as an experimental area. Careful observations were made regarding the difference of discomfort, the amount of exudate and the difference in the rate of healing of the cooled donor sites and of the controls. Biopsies of the donor sites were taken at frequent intervals.

It was found that spontaneous healing occurred in about eight days in the control area. Microscopically the repair begins with a mild, acute inflammatory reaction which persists for 72 hours. Subsequently the fibrinous layer is formed. Epithelialization takes place from the exposed ends of the cut hair follicles and sweat ducts, and the cut margin of the surface epithelium. By the 13th day the inflammatory reaction subsides and the differentiation of the epithelial layers takes place.

At temperature of 53 to 65 F. it was found that healing was delayed by four to five days. The role of vascular elements in the delay of healing which follows the exposure of donor sites to moderate cold is not clear. Microscopically the vasodilation was less conspicuous. The optimum temperature seemed to be 70 to 80 F. but most rapid epithelialization occurred with application of pressure dressing, the temperature of such donor site reaching 90 to 95 F.

There have been many advocates of the use of cold for the treatment of burns, amputation stump, and postoperatively to wounds. The investigators do not bear out the enthusiasm of these advocates. The degree of cold required to check bacterial growth and disintegration of tissue was found in experimental animals to impose additional damage to tissue.—J.J.H.

* * *

Tuberculosis in Children

Tuberculosis in Children. By Oscar Aunderbach. *Am. Jrl. Dis. Children*, 75:4, 555-569, April, 1948.

The purpose of the author is to enumerate the diversity of paths over which tuberculosis may

travel within the youthful host and to fix attention on the protean character of tuberculosis in the young child. This study was based on 90 cases of children with tuberculosis seen at autopsy at Sea View Hospital.

Forty per cent of the patients were observed during the first three years of life. In this series two thirds were negroes.

In the vast majority of cases the primary complex goes on to anatomic healing, but in a small number it may continue to progress. In 23 patients of this series the primary complex continues to progress, the majority occurring in negro children. There was some tendency to gland formation but the predilection to liquefaction and to formation of cavity was strong. In some instances it involved the greater part of the lobe. Calcification was absent in all 23 children. In two cases where liquifaction and caseation occurred in the lymph nodes, the material ruptured into a bronchus.

Hematogenous tuberculosis occurred by dissemination into the blood stream after the development of the primary complex or from an extrapulmonary process.

There were 20 cases with chronic pulmonary tuberculosis in this series.

The youngest child with chronic pulmonary tuberculosis was 18 months old, another four years old and 18 children seven to 12 years of age. In every child in this group the primary complex had undergone anatomic healing, as evidenced by calcification and encapsulation. The observations at autopsy on these children were almost entirely similar to those in chronic pulmonary tuberculosis in adults. Skeletal tuberculosis occurred in 23.3 per cent of the children. The youngest was 18 months; there were two two years, three three years, and the ages of the remaining 15 varied from five to 12 years. In 17 of these children the bone pathology was associated with the primary complex.

There were 10 children with urogenital tuberculosis, nine of whom were girls. Three had renal tuberculosis. Eight cases had genital tuberculosis, usually involving the fallopian tubes.

Thirty-seven children of this series died of tuberculous meningitis, the youngest being eight months of age. There were 10 cases during the second year. Twelve of the 37 children had progressive primary complex, the greatest number of the children had healed primary complex but many had active extrapulmonary tuberculosis. Tuberculomas were seen in 27 of the brains examined.

Two cases had isolated tuberculosis of the intestine. In a seven-year-old negro girl an attempt was made to remove a tuberculous cecum; a 22-month-old white child, which died of tuberculous

"Severe intractable asthma

requires more strenuous measures. ... Aminophyllin in doses of 0.25 Gm. dissolved in 10 cc. of water is often very effective when injected intravenously."¹

To relax spasm, relieve congestion and restore deep, regular breathing,

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has proved a valuable drug—generally effective even in epinephrine-refractory cases.

Searle Aminophyllin is indicated in paroxysmal dyspnea, bronchial asthma, Cheyne-Stokes respiration and selected cardiac cases.

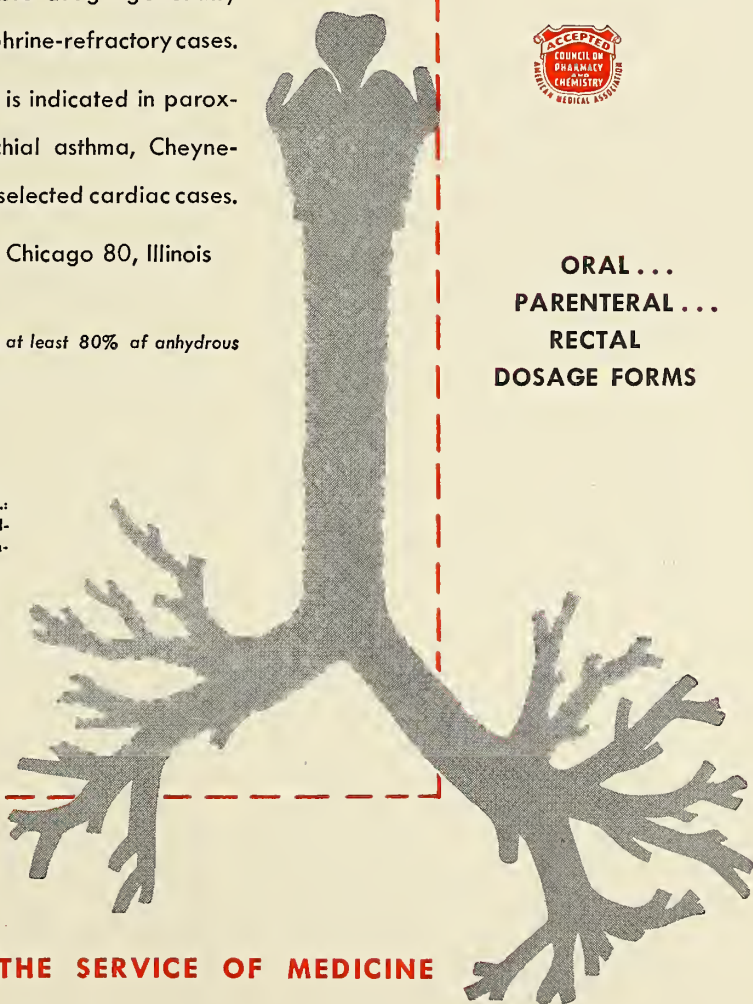
G. D. Searle & Co., Chicago 80, Illinois

*Searle Aminophyllin contains at least 80% of anhydrous theophylline.

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meningitis, was found on post mortem to have deep seated ulcers throughout the intestinal tract.

An 11-year-old colored girl had tuberculous endocarditis.

In 41 per cent of the cases in this series the cause of death was tuberculous meningitis, and in 78 per cent of this number tuberculomas were present within the brain.—D.R.D.

BOOK REVIEWS

Outwitting Your Years. By Clarence William Lieb, M.D. Published by Prentice-Hall, Inc. 70 Fifth Avenue, New York. 289 pages. Price \$2.75.

Are you afraid of growing old? The fear may start in the forties or even in the thirties. Regardless of age, "Outwitting Your Years" is a book to be recommended to anyone who is developing a fear of the advancing years. Doctor Lieb points out that chronological age is not the same as biological age. It is reassuring to know that as we advance in years, biological aging slows down.

Doctor Lieb writes as a physician and as a philosopher. He gives common sense advice on how to stay young and happy even though one has reached the stage of being a "fifty-upper." It is pointed out that the mind is the last part of the body to age and therefore a person should concentrate on keeping the mind active. We are never too old to learn new interests or to take up a new hobby.

The author not only analyzes health problems but shows how to make one's later years happy and productive. He covers such fears as being out of date, diseases of old age, being unable to bridge the gap between youth and age, insomnia, being unable to find a new job for the later years, etc. Doctor Lieb shows the way out of fear and offers a guide to a happier, healthier and more useful life for those in the years after 40. The book presents in a most interesting style a wealth of material on the subject of staying young.—E.V.T.

* * *

Geriatric Medicine. Second Edition. By Edward J. Stieglitz, M.D. Published by W. B. Saunders Company, Philadelphia. 723 pages, 180 illustrations. Price \$12.

The author presents an interesting concept on the practice of geriatrics, stating that the problems of geriatrics are not limited to actual senility but should begin with the study of normal aging processes characteristic of senescent age. Adequate writing is given the disorders of each system of the aging body with an excellent chapter on disorders of the mind and nervous system.—A.L.N.

* * *

The American Nurse's Dictionary. By Alice L. Price, B.S., R.N. Published by W. B. Saunders Company, Philadelphia. 656 pages. Price \$3.75.

After reviewing this dictionary I believe that it is not complete enough in the definitions given. It could not be used very satisfactorily for student nurses.—F.R.C.

* * *

Oral and Dental Diagnosis. Third Edition. By Kurt H. Thoma, D.M.D., F.D.S.R.C.S. Eng. Published by W. B. Saunders Company, Philadelphia. 563 pages, 776 illustrations, 60 in color. Price \$9.50.

The third edition of this work is the latest addition to the literature by dentistry's most prolific writer. Originally published in 1936 as *Oral Diagnosis and Treatment Planning*, it was revised in 1943 and the name changed to *Oral Diagnosis with Suggestions for Treatment*. The present edition again has undergone a change in title to *Oral and Dental Diagnosis*, a more fitting designation for a work developed to recognize abnormalities and diseases of the oral cavity and contiguous parts.

While this work will serve as a valuable reference for dentists and oral surgeons, its worth to the physician and medical student should not be discounted. Its 31 chapters discuss the principles and methods of examination and diagnosis of the mouth, and the diagnosis and treatment of dental and oral diseases and malformations. To the physician and student of medicine this volume will prove a valuable source of information and a stimulus to further study of the oral cavity.

The volume is generously illustrated with clinical reproductions and photomicrographs, and a bibliography for the 31 chapters is appended.

It is with regret that a criticism must be offered. Colored illustrations of oral lesions which appeared in the original edition (1936) and which were reproduced from water color drawings are still retained in the present edition. While these illustrations served their purpose for that particular period, with the vast amount of clinical material which is available to the author it would be in order that more modern and accurate color photographic reproductions be offered to his readers and students.—R.W.E.

* * *

Medical Etymology. By O. H. Perry Pepper, M.D. Published by W. B. Saunders Company, Philadelphia. 263 pages. Price \$5.50.

This small but intriguing and interesting book provides for the first time the mechanism whereby the medical student or practicing physician can satisfy his curiosity as to the derivation of common terms in use in the field of medicine. The author, who is well-known for the diversity of his inter-

FROM SECRETARY OF DEFENSE LOUIS JOHNSON—

AN URGENT APPEAL TO YOUNG DOCTORS!



Your personal help is needed to avert a serious threat to our national security!

By the end of July of this year we will have lost almost one-third of the physicians and dentists now serving with our Armed Forces. Without an increased inflow of such personnel, the shortage will assume even more dangerous proportions by December of this year.

These losses are due to normal expiration of terms of service. The professional men who are leaving the Armed Forces during this critical period are doing so because they have fulfilled their duty-obligations and have earned the right to return to civilian practice.

Without sufficient replacements for these losses, we cannot continue to provide adequate medical and dental care for the almost 1,700,000 service men and women who are the backbone of our nation's defense.

Normal procurement channels will not provide sufficient replacements!

To alleviate this critical, impending shortage of professional manpower in the three services, I am urging all physicians and dentists who were trained under wartime A. S. T. P. and V-12 programs under government auspices or who were deferred in order to complete their training at personal expense, and who saw no active service, to volunteer for a two-year tour of active duty, at once!

We have written personally to more than 10,000 of you in the past weeks urging such action. The response to this appeal has not been encouraging, and our Armed Forces move rapidly toward a professional manpower crisis!

Many responses have been negative, but worse—a great number of doctors have not replied. It is urgent that we hear from you immediately!

We feel certain that you recognize an obligation to your fellow men as well as to your profession in this matter. We are confident that you will fulfill that obligation in the spirit of public service that is a tradition with the physician and dentist.

There is much to be said for a tour of duty with any of the Armed Forces. You will work and train with leading men of your professions. You will have access to abundant clinical material; have the best medical and dental facilities in which to practice. You will expand your whole concept of life through travel and practice in foreign lands. In many ways, a tour of service will be invaluable to you in later professional life!

Volunteer now for active duty. You are urged to contact the Office of Secretary of Defense by collect wire immediately, signifying your acceptance and date of availability. Your services are badly needed. Will you offer them?

Louis Johnson

ests in the field of medicine as well as his great effectiveness in the teaching of clinical medicine, has been stimulated to write this book by the many inquiries as to word derivation which he has received from students and colleagues alike over the many years of his teaching experience. The author's well-deserved reputation for piquant humor creeps out most unexpectedly in the definition of many of the words and in this respect one is greatly reminded of the famous dictionary of Samuel Johnson.

In this modern era when physician and student are more the technician and less the curious and cultured individual, one cannot describe this book as essential, but the physician or student who would want to really know rather than just being acquainted with his profession will find this little book of great value.—F.D.M.

* * *

Unipolar Lead Electrocardiography. By Emanuel Goldberger, M.D. Published by Lea and Febiger, Philadelphia. 182 pages, 88 illustrations. Price \$4.00.

In the preface the author states that the material to be presented is the result of his studies of unipolar leads from the aspects of their practicability for routine clinical use and their relationship to standard leads and precordial leads and unipolar leads in general. He thereby implies, and the text verifies, that this is a review of electrocardiography with particular emphasis on unipolar leads after the author's simplified technic (Augmented Unipolar Leads). It is refreshing to see a monograph on the subject that Dr. F. N. Wilson began discussing some years before but on which he has never written a book. Frequent acknowledgement of Wilson's pioneer studies can be recognized when comparisons are made. Dr. Goldberger's studies led him to develop a simple indifferent pole and to use procedures for making so called augmented unipolar leads (in contrast to Wilson's indifferent electrode and unipolar leads), and the book adequately presents the simple technics. Inasmuch as rhythm disturbances based on automaticity disorders are no better demonstrated by unipolar studies, those abnormalities are not discussed, though bundle branch block is discussed. The effects of the heart's position are discussed under headings: (1) rotation around the antero-posterior axis of the heart, (2) rotation around the long axis of the heart, (3) backward or forward rotation of the apex around the transverse axis of the heart.

It is pointed out that x-ray studies are as yet inadequate to indicate the degree of rotation in the fashions mentioned. The statement is made that correlation of the electrocardiographic patterns with the position of the heart is difficult and there are

no criteria to accurately describe rotation around any of the axes.

Despite this statement, reference is made to the work of many contributors who have written on the electrocardiographic findings in hearts rotated around all three axes. To determine the position of the heart from an electrocardiographic point of view the following rule is presented: "since the basic patterns of unipolar leads near the surfaces of the heart are known, one can assume, when similar patterns are found in any of the unipolar extremity leads that such an extremity faces a particular surface of the heart." Myocardial infarction, new, old, and multiple is adequately covered. The value of unipolar extremity leads in differentiating pulmonary embolism and posterior myocardial infarction is demonstrated.

The author makes the healthy statement that "the electrocardiogram is only one of the many methods that are used in clinical diagnosis," after having stated the axiom that "a normal electrocardiogram does not necessarily indicate that the patient does not have heart disease." Certainly these warnings are proper, at a time when production is allowing commercial firms more instruments than there are men who can use them.

In general this is a contribution to the monograph literature, because the author's reasoning employs as its basis what the unipolar limb leads and precordial leads show. The author speaks authoritatively and makes free use of deflection lead identification symbols such as qRs and qRS to indicate prominence of certain waves. Also such designations as Q L Arm are used to identify waves in augmented unipolar limb leads.

The next edition will no doubt clarify some of the text which makes the reader at times confused. All legends are not as understandable as they might be and in some instances the figure and legend are not referred to in the text for several pages. In some of the case presentations the abnormalities referred to appear questionably significant (example: reference is made Q in V₅—when it is obvious such is not present).

These criticisms are minor and are more than compensated for by the enthusiastic repeated, almost promotional emphasis placed on unipolar leads. The book should be an adjunct to a library of several more comprehensive works on the subject.—P.W.M.

* * *

Medicine of the Year, 1949. First Publication. Edited by John B. Youmans. Published by J. B. Lippincott Company, Philadelphia. 143 pages.

The problem of an ever-expanding literature on medical subjects increasingly confronts the special-



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ist as well as the general practitioner. This publication is designed primarily to acquaint the reader with the trends of thought and newer developments taking place within the several clinical specialties during the past year. Each of the contributors, a well-known authority in his field, succeeds in presenting a discussion which is complete with respect to major advances and of necessity, stripped of the many details of the experimental developments. On the other hand the discussions are detailed enough to include dosages and some techniques where pertinent. A well chosen bibliography follows each section and offers ample material as a starting point for one interested in further investigation. Each section is preceded by a summary in bold face type of the subjects covered and the material is further broken down into smaller sections each labeled with bold face sub-titles. This system of composition contributes greatly to the facility of quickly perusing a subject.

This publication should be of value to the general practitioner in directing his reading in each of the fields and is equally helpful to the specialist in attempting to maintain as broad a perspective as possible. It is hoped that this publication will be continued in the future.—R.E.B.

* * *

Help Yourself to Better Sight. By Margaret Darst Corbett. Published by Prentice-Hall, Inc., New York. 218 pages, 13 illustrations. Price \$2.50.

This book is written by a person with a very limited knowledge of ophthalmology. This is apparent when one considers the claims of cures of medical ailments that could not possibly be influenced by movements of the eye. The theory of ocular accommodation by means of the extra-ocular muscles was not original with Dr. Bates as stated in this book. Thus far it has been impossible to substantiate this theory of accommodation by experimental or clinical work.

This cult (and there are numerous others) exists because of three large groups of patients. Group I are those individuals wearing glasses with low refractive errors that are not needed; Group II, patients with ocular abnormalities that are not benefited by glasses (such as, congenital anomalies, corneal scars and diseases of the retina, optic nerve and choroid); Group III, the large group of tense individuals with a psychoneurotic background.

Despite the above criticism there is a place for this type of therapy. The unfortunate thing is that people administering this type of treatment are not able to recognize individuals with organic diseases (such as glaucoma) that can only be saved from total blindness by early medical or surgical treatment.

The ophthalmologists, as well as many other spe-

cialists, have become so engrossed with organic medicine that they have failed to recognize and treat the psychic factors in the patient. Many ophthalmologists are prone to give credit for the relief of symptoms to the correction of small refractive errors, when the real therapy was psychological during and after the refraction. In the course of a busy day it is much easier to write a prescription for glasses than spend time attempting to evaluate the psychic factors of the complaints.

I feel that any physician will benefit by reading this book, because the course of therapy outlined is certainly conducive to the relaxation of an individual. A similar type of treatment would be equally beneficial to the tense, nervous patient with cardiac or gastrointestinal symptoms. In our modern, fast-living era, more people are having difficulties due to nervous tension and the procedures outlined in this book if followed will certainly be helpful. Insofar as the eyes are concerned, it will have no influence on altering the changes of advancing age (such as presbyopia); therefore, as yet there is no hope for the person needing reading glasses. The greatest danger is in failure to recognize and treat organic disease.—A.N.L., Jr.

CARE Solicits Scientific Books

CARE, the non-profit agency which has brought food to thousands of hungry people overseas, is now embarked upon a "food for the mind" program to rebuild the war-wrecked libraries of Europe and Asia. The program aims to replenish the shelves of technical schools and libraries abroad with gifts of new American scientific books.

Individuals or groups may contribute funds in any amount for the book program. Donors of \$10 or more may designate the country, the institution, and the category (but not the title) of the book to be sent. Selection of the books will be based upon lists compiled by a bibliography committee headed by Dr. Luther Evans, Librarian of Congress.

Churches Oppose Socialization

The American Council of Christian Churches, meeting at Denver in April, adopted a resolution opposing socialized medicine, stating that an act of the state to usurp responsibility for medical care constitutes an infringement of human responsibility and individual freedom. "The soul and the body are inseparably connected, parted only by death," the resolution affirmed, "and when the state attempts such care of the body, it inevitably moves to direct the mind and spirit."

The last paragraph of the resolution reads, "The battle against state medicine is not for the doctors alone, but it belongs to all Christian people who cherish their own freedom as well as the physician."

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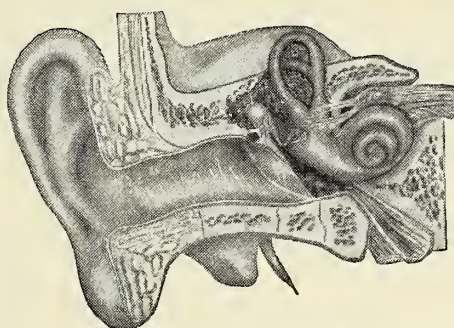
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National Enrollment Agency Approved

After receiving a report from the Council on Medical Service of the American Medical Association, implying that Associated Medical Care Plans might soon be free to establish its own national enrollment agency, the 1949 Annual Conference of Blue Shield Plans voted on April 19, 1949, to establish such an agency, to be known as the Blue Shield Health Service, Inc.

After several years of study, marked by serious debate during recent months, Blue Shield Plans cast a weighted vote of 173-21 in favor of establishing a national enrollment agency to be controlled by Blue Shield Plans and the medical profession.

The present proposal is a modification of one previously turned down by the AMA House of Delegates, in which Blue Shield and Blue Cross would have united their efforts in a jointly owned enterprise. Blue Cross, in the meantime, has proceeded with its own plans to establish a Blue Cross Association and a Blue Cross Health Service, Inc.

In accordance with the resolution and proposal adopted by Blue Shield the Blue Shield Health Service, Inc. would be incorporated as a separate entity, after which contractual agreements with the corresponding Blue Cross organization might be effected for purposes of offering medical and hospital protection to the public in one package.

The proposal calls for contributions to capital funds from the local Blue Shield Plans, the required minimum being \$375,000 and the maximum \$500,000. Contributions would be made directly to Associated Medical Care Plans for the purpose of either purchasing the entire stock or supplying the capital funds needed for launching Blue Shield Health Service, Inc.

The suggested composition of the Board of Directors would include representatives of the contributing plans, the Blue Shield Commission, and the American Medical Association, although the exact ratio of representation was not determined in the proposal as adopted by the Plans at the Annual Conference.

Chief among the functions to be performed by such an agency would be the coordination of Blue Shield enrollment when dealing with national accounts, which are defined as groups of employees working for firms with locations scattered throughout the country in a way which prevents any one Blue Shield Plan from serving the entire group.

A copy of the actions taken by Blue Shield was mailed on May 6 to each member of the AMA Houses of Delegates for their information, inasmuch as the Blue Shield Commission was instructed to delay implementing the proposal until after it had been considered by the American Medical Association. The ratification of a majority of the govern-

ing boards of Blue Shield Plans will be required, also, before the Blue Shield Commission may proceed to solicit funds for the establishment of such an enrollment agency.

Heart Death Rate Rises

While deaths from all causes among ordinary life insurance policyholders occurred at a new low rate in 1948, heart deaths accounted for more than half of the total, the Institute of Life Insurance reports. The heart disease death rate rose last year to a record high.

Total deaths per 100,000 were 625.1 in 1948, compared with 668.8 in 1946 and 751.2 in 1944. Deaths from the chief cardiovascular-renal diseases were 327.9 per 100,000 in 1948. These include diseases of the heart, cerebral hemorrhage and nephritis, and together represented 52 per cent of total deaths during the year.

Cancer, second most important cause of death, accounted for 98.7 deaths per 100,000 last year. Accidents had a death rate of 42.7, and tuberculosis deaths declined to a record low rate of 11.4 per 100,000. The 1948 experience among industrial insurance policyholders followed a similar pattern.

Periodicals at Stormont Library

At the request of the Committee on Stormont Medical Library, the Journal is publishing below a list of the periodicals currently being received at the library. The files of the different journals have been accumulating for periods varying from two to ten years. The library will welcome the opportunity of serving physicians of the state who wish to borrow books or any of the periodicals listed below:

American Heart Journal
 American Journal of Clinical Pathology
 American Journal of Digestive Diseases
 American Journal of Diseases of Children
 American Journal of Medical Sciences
 American Journal of Medicine
 American Journal of Nursing
 American Journal of Obstetrics and Gynecology
 American Journal of Ophthalmology
 American Journal of Orthopedic Surgery
 American Journal of Public Health
 American Journal of Roentgenology and Radium Therapy
 American Journal of Surgery
 American Journal of Tuberculosis
 American Physician
 American Review of Soviet Medicine
 American Review of Tuberculosis
 Anesthesiology
 Annals of Internal Medicine
 Annals of Otolaryngology, Rhinology and Laryngology
 Annals of Surgery
 Annals of Western Medicine and Surgery
 Annual Review of Biochemistry
 Annual Review of Physiology
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 Borden's Review of Nutrition Research
 British Medical Bulletin
 Bulletin of the American Cancer Society, Inc.
 Bulletin of the American College of Surgeons
 Bulletin of the Johns Hopkins Hospital
 Bulletin of the Menninger Clinic
 Bulletin of the New York Academy of Medicine
 Bulletin of the School of Medicine of the University of
 Maryland
 Bulletin of U. S. Army Medical Department
 Burned News Letter
 California and Western Medicine
 California Medicine
 Canadian Journal of Public Health
 Cancer Diagnosis, Treatment, Research
 Cancer News
 Ciba Symposia
 Cleveland Clinic Quarterly
 Clinical Endocrinology, Journal of
 Clinical Excerpts
 Clinical Investigation, Journal of
 Clinical Medicine
 Collected Papers of the Mayo Clinic and the Mayo
 Foundation
 Connecticut State Medical Journal
 Current Researches in Anesthesia and Analgesia
 Dallas Medical Journal
 Delaware State Medical Journal
 Diplomate
 Endocrinology
 Geriatrics
 Harper Hospital Bulletin
 Hawaii Medical Journal
 Hospital Corps Quarterly
 Human Fertility
 Hygeia
 Illinois Medical Journal
 Illinois Monographs of the Medical Sciences
 Index Catalog of Library of Surgeon General's Office
 Industrial Hygiene
 Industrial Medicine
 Journal of the American Medical Association
 Journal of the Arkansas Medical Society
 Journal of Bowman Gray School of Medicine
 Journal of Experimental Medicine
 Journal of the Florida Medical Association
 Journal of Immunology
 Journal of Indiana State Medical Association
 Journal of Industrial Hygiene and Toxicology
 Journal of Iowa State Medical Society
 Journal of Kansas Medical Society
 Journal of Laboratory and Clinical Medicine
 Journal of the Maine Medical Association
 Journal of the Medical Association of Georgia
 Journal of the Michigan State Medical Society
 Journal of the Missouri State Medical Association
 Journal of the Mount Sinai Hospital
 Journal of the National Cancer Institute
 Journal of the Oklahoma State Medical Association
 Journal of Pediatrics
 Journal of South Carolina Medical Association
 Journal of the Tennessee State Medical Association
 Journal of Thoracic Surgery
 Journal of Venereal Disease Information
 Journal-Lancet
 Kansas Cancer Bulletin
 Kansas City Medical Journal
 Kansas Nurse
 Kentucky Medical Journal
 Lancet
 Laryngoscope
 Lederle Laboratories, Bulletin of
 Mayo Clinic, Proceedings of the Staff Meetings
 Medical Annals of the District of Columbia
 Medical Bulletin of the Veterans' Administration
 Medical Clinics of North America
 Medical Economics
 Medical Record
 Medical Woman's Journal
 Medicine
 Mental Hygiene
 Minnesota Medicine
 Mississippi Doctor
 Modern Hospital
 Modern Medicine
 National Tuberculosis Association, Bulletin of
 Nebraska State Medical Journal
 New England Journal of Medicine
 New Orleans Medical and Surgical Journal
 New York Medicine
 New York State Journal of Medicine
 North Carolina Medical Journal
 Northwest Medicine
 Nutrition Reviews
 Ohio State Medical Journal
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 Penicillin—C. S. C. Reporter
 Pennsylvania Medical Journal
 Philadelphia Medicine
 Physician's Bulletin
 Postgraduate Medicine
 Practice of Medicine
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 Proceedings of the Institute of Medicine of Chicago
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 Public Health Bulletin
 Public Health Nursing
 Public Health Reports and Supplements
 Quarterly Bulletin of the Northwestern University
 Medical School
 Quarterly Bulletin of the Sea View Hospital
 Quarterly Cumulative Index Medicus
 Race Relations, A monthly summary of events and trends
 Rhode Island Medical Journal
 Rocky Mountain Medical Journal
 Scope
 Shawnee County Medical Society, Bulletin of
 South Dakota Journal of Medicine and Pharmacy
 Southern Medical Journal
 Southern Medicine and Surgery
 Southwestern Medicine



The psychosomatic price

The tensions of modern living demand a price that is frequently gastrointestinal injury, occasionally peptic ulcer. The prevention and cure of peptic ulcer embrace the application of hygienic, psychiatric, dietary, and therapeutic techniques to this problem.

Logically, therapy should include the administration of materials which will tend to reduce the acidity

of the gastric content without producing alkalosis or other undesirable effects. Coincidentally, a demulcent effect should be sought to coat the ulcerated surfaces and protect them from erosion. *Lederle* research has found that a casein, low in sodium, high in calcium, in appropriate form, when given by mouth will accomplish these ends and provide the patient with prompt symptomatic relief.

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Surgical Clinics of North America
Texas Reports on Biology and Medicine
Texas State Journal of Medicine
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Transactions of the American Therapeutic Society
Tri-State Medical Journal
U. S. Army Medical Department, Bulletin
U. S. Naval Medical Bulletin
U. S. Public Health Service Annual Report
University of Minnesota Hospitals and Minnesota
Medical Foundation, Bulletin of
Urologic and Cutaneous Review
War Medicine
Westchester Medical Bulletin
West Virginia Medical Journal
What's New
Wisconsin Medical Journal
Yale Journal of Biology and Medicine

THE KANSAS PRESS LOOKS AT MEDICINE

Speaking Out on Issues

The Kansas City Kansas Chamber of Commerce has taken a stand on the question of compulsory health insurance. The Chamber is not opposed to improvement of the nation's health. But it disagrees with the national administration as to methods.

In stating its position on public questions the Chamber is doing nothing more than fulfilling its original, basic function of protecting and strengthening the business interests of the community. The Chamber of Commerce of the United States, state chambers and local chambers generally are becoming more active and articulate in the shaping of the affairs of the nation. They, like most representative groups, are showing an increasing awareness of the trends in government. Business and commercial firms of America have so much at stake they cannot afford not to be alert.

The positive health program adopted by the local chamber's committee indorses expansion of training facilities, maintenance of high standards of service, adequate hospital and clinical facilities, expansion of research projects, state health department programs and expansion of non-profit and voluntary prepayment health service plans to cover the indigent and semi-indigent.

It is opposed to the compulsory health insurance proposal because it believes this will require excessive taxes as proved by the experience of other nations. The plan has demonstrated the tendency of insured persons to make unnecessary and unreasonable demands on health care services, thereby impairing the service and pyramiding costs. It is feared

that compulsory health service regiments health services and destroys the independent relationship between practitioner and patient, kills initiative and removes the incentive to acquire professional excellence.

This is the chamber's case against the proposal.—*Kansas City Kansan*, May 1, 1949.

* * *

Which Plan of Health?

The lively debate in Topeka on the national health insurance program served an excellent purpose. In sponsoring a free public discussion on the pros and cons of socialized medicine the Kansas Medical Society sought to stimulate thinking and increase information on a subject that affects every person in the country.

Like many others this discussion has suggested one basic question. Should this country work for the broadening and perfection of the present voluntary system that has produced better results than any other in the world? Or should it seek to replace that system or impose upon it a top-heavy program of bureaucratic compulsion that doubtless would cost more in money and provide inferior service in addition?

The choice is frankly that. Few states and local communities today are failing in health progress while federal assistance (without compulsion or regimentation) has been growing and can be further extended until all may be served regardless of income. At the same time prepaid hospital and medical insurance, as represented by the Blue Cross and the Blue Shield along with numerous commercial plans, has been steadily expanded. In only a few years these various programs have covered nearly one-half the population of the country. In Kansas last year the Blue Shield enrollment was more than doubled, increasing from 53,204 to 106,480.

The medical profession is becoming alert and is aware of its omissions in the past. The whole country is more aroused on public health than ever before. Doesn't the outlook here hold greater promise than the compulsion that has been tried elsewhere with doubtful results?—*Kansas City Star*, May 14, 1949.

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THE JOURNAL of the KANSAS MEDICAL SOCIETY

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AUGUST, 1949

No. 8

Office Gynecology*

Robert J. Crossen, M.D.

St. Louis, Missouri

In the discussion this afternoon I shall cover some of the advances that have been made in the diagnosis and treatment of a few of the gynecological conditions which can be handled in the office. One of the most important of these is the question of cancer prevention and detection. This subject is not a new one, but it is one which needs to be explored frequently to be sure that we are doing everything that can be done to save our patients from cancer deaths.

As with other advances in medicine, progress in this field has been slow, due in part to apathy of the public and in part to the natural resistance of physicians in general to new ideas which have not been tested by time. I can recall some 25 years ago the discussion of a paper read on this subject by Dr. H. S. Crossen, in which he had suggested the advisability of yearly pelvic examinations in women between the ages of 35 to 40 and biannual examination from 40 to 50 years of age. Many of the discussants felt that this was a rather bold suggestion and they wondered if such a step was really indicated. Now, of course, we all advise biannual examination and the public has become educated to the wisdom of this advice.

The treatment of cancer is being constantly improved, but the prevention of cancer is still the greatest life-saving measure. Through the years, effective methods of prevention, which can be used by the general practitioner as well as the gynecologist, have been developed. The general practitioner and the internist must assume a key position in the program for cancer prevention, for they are usually the first to see the patient.

The patients who come to him for other conditions and have no pelvic symptoms, present one of the most difficult problems in cancer prevention. We know that even without subjective symptoms early cancer, or conditions leading to its inception,

may be present. On the other hand, any practical rule of action must take into consideration the patient's natural reluctance to vaginal examination not indicated by symptoms. By tactful instruction, the patient must be made to realize, by the physician, the advisability of a local examination as part of the general examination on which his responsible advice to her is to be based. From the physician's standpoint, the local examination is imperative, for his responsibility as the patient's medical adviser makes it necessary to know definitely whether or not there is beginning cancer of the cervix or chronic irritation that may lead to it.

The question of how frequently the examination should be repeated was investigated recently by a group of physicians in Philadelphia and they found that biannual examinations were often enough to discover chronic irritation or carcinoma in the early stage.

The question of the age at which these examinations should start is frequently asked. Carcinoma of the cervix occurs most frequently in the two decades from age 35 to age 55, but numerous cases have been reported before 35 and after 55; hence, any woman of 30, especially one who has had children or previous cervical infection, should be checked at least to 55 years of age.

The patient then, having presented herself for the cancer prevention examination, places on the shoulders of the doctor the responsibility of discovering whether or not she has an early new growth or any condition which is apt to lead to the development of carcinoma. What methods are available for this detection work? It is now generally recognized that the chronically infected or irritated cervix is an important factor in the development of cervical carcinoma, and it is for this reason that special care is taken to treat post-partum lacerations and eversion adequately after delivery and in the office later, so that this potential source of malignant dis-

*Presented at the 90th annual session, Kansas Medical Society, May 9-12, 1949.

ease may be eliminated. When this care has been neglected and the chronically diseased cervix is present, the question arises as to what procedures should be followed. Formerly, many tests such as the colposcope examination, the Shiller test, and frequent multiple biopsies were done in the hope of detecting the earliest sign of carcinomatous change. Undoubtedly, in some of these, the cancer was beginning its early deep invasion while the doctor was waiting for it to appear on the surface, and thus the best chance of prevention or detection and early treatment was lost. Mild cases of cervicitis can, of course, be treated successfully in the office by cautery, small conization, or coagulation, but palliative treatment of the persistent or the more extensive case with deep-seated cysts is inexcusable. These cases should have a wide removal of the infected area, preferably by wide conization. In this way the area is removed and the pathologist has all of the suspicious tissue for careful microscopic examination. This either rules out carcinoma, or, if beginning malignant change is present, shows necessity for prompt treatment. In the American Journal of Obstetrics and Gynecology for January, 1949, I reported a series of over 1,000 cases of wide conization followed from one to 14 years, and there were no cases of subsequent cervical carcinoma in the cases followed.

The search for a simple and reliable test for the detection of early cancer goes on, and at present the vaginal smear is the method receiving most of the publicity. The early reports of Papanicolaou and Traut and the more recent reports by Fremont-Smith; Meigs; Ayre; Graham, Sturgis and McGraw; Sheffy, Rakoff, and Hoffman have shown the real value of this method, but many of the over-enthusiastic articles fail to mention the prerequisites needed for a reliable diagnostic service. In the first place, it is necessary to have a cytologist experienced in this particular field. Traut stated that it takes four months to train a person who has had previous training, in tissue diagnosis, so that he can screen out the clearly negative slides from those which are suspicious. A much longer period of training is needed to make a positive diagnosis with a 95 per cent degree of accuracy. Even the experts agree that the smear should always be confirmed by biopsy, for false positive reports are apt to lead to unnecessary surgery. Even more important is the fact that false negative reports, in cases where early carcinoma exists, give a false sense of security and failure of early treatment. This was emphasized by Sheffy, Rakoff, and Hoffman who reported 28 per cent of cervical carcinomas and 33 per cent of fundal carcinomas missed by the smear technique.

Ayre has shown that the method of scraping

around the external os and then blocking this tissue obtained in paraffin, aids in the accuracy of tissue diagnosis.

Though this promises to be a real step ahead in the discovery of early uterine carcinoma, at present there are only a very few cytologists in the country qualified in this field; they should continue their efforts until the practical importance of the test can be evaluated, and in the meantime it should be used only as an adjunct to the more accurate and decisive methods of diagnosis. In the Gynecological and Obstetrical Department at Washington University, we have been running smears along with other methods of diagnosis, and although one unsuspected case of carcinoma was picked up, the test in our laboratory is still far from reliable. Certainly the time is not yet ripe for insisting that every patient have a cervical smear.

Some of the more recent developments in the office treatment of vulvar diseases are concerned with: condylomata acuminata, leukoplakic vulvitis, parasitic infections, Bartholin abscess, and edema of the vulva.

The treatment of condylomata acuminata until recently consisted of keeping the vulva clean, douches, and the application of mild antiseptic or caustic ointments. If these were not successful, the patient was given an anesthetic, and the lesions were scrubbed with formaldehyde or removed, usually by electro-surgery; x-ray or radium was also advised in some cases. In 1941 Culp and Kaplan reported 200 cases treated by Podophyllin. Since then numerous articles on Podophyllin have appeared in the literature. The cytological effects of Podophyllin were studied by Sullivan and Wechsler. Following its application, the condylomata become edematous and an inflammatory reaction appears and remains for several days. Within a week, involution occurs and the wart shrinks into a small mass which finally drops off, leaving no scar. Various vehicles have been suggested; Sullivan and King used 25 per cent mixture in mineral oil, Marks used 15 per cent solution in compound tincture of benzoin, Weiss used 25 per cent solution in alcohol, and there is also an ointment manufactured by Abbott, 25 per cent in hydro-sorb base. Whichever preparation is used, care must be taken to protect the surrounding normal skin, and the patient should not be allowed to use it at home. The skin around the warts should be covered by vaseline and then the Podophyllin applied to the wart, wiping off any excess. Powder may be applied to the rest of the vulvar area if desired. After eight hours, the parts including the warts should be washed thoroughly with soap and water by the patient. The patient should return in 10 days and a second application made if necessary. M. Sullivan,

Friedman and Hearin, in a recent article, find that Podophyllin is a mixture of four components: podophyllotoxin, podophyllaresin, picropodophyllin and quercetin. They used the pure podophyllotoxin in 44 patients with 81.5 per cent cures, and they feel that the active principle responsible for the curative effect on condylomata acuminata is the podophyllotoxin.

Another vulvar lesion which has long been a problem for the gynecologists is leucoplakic vulvitis. Taussig, in his outstanding work on this subject, stated that this condition was a definite precursor of vulvar carcinoma and he felt, from his observations, that it was safe to assume that at least half of the cases would eventually undergo malignant change. He stated that although he had seen some temporary alleviation he knew of no five-year cures, spontaneous, medical, or radiotherapeutic. He felt that vulvectomy was the only effective or safe therapy. In young women, one naturally hesitates to do this radical procedure, so when reports appeared on the efficacy of estrogen therapy, we all, of course, gave it a trial. I have had several cases in which the condition was arrested and even improved slightly, but none of them have been permanent. In the past year, I have done vulvectomies in two patients who had been on estrogens for several years. One, who lived in Arkansas, had continued the estrogenic therapy for two years without returning for observation, and when she finally did come in the condition was so much worse that I was afraid that there was beginning carcinoma. A radical vulvectomy was done, and fortunately no carcinoma was found.

New hope for an effective conservative treatment has been aroused by the recent work of Hyams and Bloom. These workers feel that leucoplakia vulvae is of metabolic origin, due to a failure in utilization and/or absorption of vitamin A. They investigated a group of 18 patients with histologically verified leucoplakic vulvitis. Since keratinization of the epithelium is one of the prominent features in leucoplakia, and since Wolbach and Howe had demonstrated that similar changes occur when there is continued absence of vitamin A in the diet, Hyams and Bloom decided to try giving vitamin A to the 18 patients with leucoplakic vulvitis. The daily dosage varied from 250,000 to 500,000 units, supplemented by injections of 50,000 units twice weekly. In addition, each patient received 15 minims of dilute HCL in water, three times daily. Of the 18 patients treated, 14 were relieved, both subjectively and objectively. Two of the unimproved cases were diabetics, one was syphilitic, and one had cardio-renal-vascular disease. The authors feel that these complications interfered in some way with the absorption of vitamin A. In four years of observation,

none of the cases showed a tendency toward vulvar carcinoma. Since this article appeared in 1947, I have placed three cases of leucoplakic vulvitis in younger women on this therapy and all have shown marked improvement.

In regard to the parasitic infections of the vulva, the older treatments have been supplanted by more efficient and less messy methods of treatment.

For pediculosis pubis, the patient is instructed to powder the pubic area thoroughly with five per cent D.D.T., daily for three days. In cases where this does not kill the mites, cuprex sol. (Merck) rubbed in thoroughly will usually be effective.

Prior to the introduction of benzyl benzoate, the treatment of scabies consisted of the use of ointments and salves which were left on for several days. Nielson and Kissmeyer treated 8,000 patients with a single application of benzyl benzoate emulsion and claimed uniformly good results. In a report last year, Robinson found that in cases in which there was a superimposed pyoderma, a benzyl benzoate tyrothricin mixture was more effective than either alone; the formula he used was manufactured by Sharpe and Dohme under the trade name of "Tyroscabe." The blisters were opened and washed with warm soap and water, then dried. The application was made on two successive days and then the patient took a warm bath. Sixty-nine of the 71 cases were cured within five to 14 days. Kessler and Hines, in a recent AMA Journal, report excellent results using hexachlorocyclohexane in a vanishing cream base.

Another infection usually having its origin through the gynecological portal is, of course, gonorrhea. I shall not try to go into a general discussion of this condition; suffice it to say that the sulpha drugs and the newer antibiotics have proved effective in most cases. In the refractory cases these treatments should be supplemented by fever therapy. The abscess of the Bartholin gland, whether due to gonorrheal or non-specific infection, formerly required incision and drainage and then frequently secondary removal of the gland. Recently, excellent results have been secured by Goldberger and Lapid, using the following procedure: the vulva is cleaned with soap and water and an 18-gauge needle is inserted directly into the abscess cavity from the mucosal side of the abscess. The pus is aspirated. Then with the needle left in place and with a fresh syringe, 200,000 units of penicillin in 10 cc. of normal saline are slowly injected. After removing the needle, a piece of gauze is held over the point of entry for several minutes. They found that the patients treated in this way enjoyed immediate relief of the exquisite local tenderness and the evidence of the inflammatory process disappeared in 24 hours.

Pruritis vulvae is another condition which frequently causes the patient to make a prompt visit to the doctor. I will not attempt to go into the many causes of this condition. After ruling out the common causes such as pin worms, mycotic and other diseases of the rectal and vulvar skin, furunculosis, parasitic diseases, leucorrhea and urinary infections, allergic reaction to drugs or external irritants should be suspected. Certain materials in the underwear, pads, contraceptive jellies, soaps, home remedies, salves and powders may cause marked irritation. The treatment is to discover and avoid the causal agent. Since the advent of pyribenzamine, this has been used either by mouth, 50 mgm. four times a day, or as an ointment or creme locally. The immediate relief of the acute itching is comforting to the patient as well as the doctor. Feinberg and Bernstein obtained relief of the intense itching in 24 of 33 patients suffering from eczema, many of whom had had no relief from other treatments. The pyribenzamine ointment does not cure the underlying cause of the eczema, but by eliminating the scratching it allows the inflammatory reaction in the skin to clear up.

A rather infrequent but very distressing condition which sometimes occurs in pregnancy is edema of the vulva. It was seen more frequently in the not too distant past, when we used to place our toxemia cases on a protein-free diet over many weeks. I saw two such cases, in consultation, in which the vulva was so edematous that small areas of gangrene of the skin were present. The only advice I could think of, in the pre-protein balance era, was hypertonic glucose, mag. sulphate and multiple incisions. Since the newer knowledge of hypoproteinemia and the importance of the colloid osmotic pressure of the serum protein in water balance, the underlying cause of this condition is better understood. Eleven cases were reported by Arnell. In addition to bed rest, with glucose containing vitamins C and B, and a high-protein diet, these cases received an average of 2,000 cc. of whole blood and additional plasma if needed. In a few of his very severe cases, multiple punctures were required for immediate temporary relief.

Another condition which we are frequently called upon to treat is vaginal discharge. The diagnosis and treatment of leucorrhea is well known to you, and I shall not spend time rehashing the whole subject but will attempt to touch the high spots and bring the treatments up to date. Vaginitis in children needs mention.

When a mother brings her pre-puberty daughter in for vaginal discharge, the following conditions should be considered: physiologic exfoliation of the vaginal epithelium which sometimes occurs for some

months prior to the onset of menstruation, foreign body in the vagina, non-specific infection from dirt, feces, or manipulation, and gonorrheal vaginitis.

A smear of the secretion will rule out gonorrhea. If the smear contains a predominance of epithelial cells and few leucocytes, it is probably due to the cyclic physiological changes occurring in the vaginal wall, and no treatment other than cleanliness is needed. It is important to impress this fact on the mother, or she is apt to be dragging her young daughter from office to office trying to find out why Mary has a slight soiling of her panties, thereby running the danger of making a psychiatric problem of her otherwise normal child.

Should the smear show a predominance of pus cells, further investigation is needed. With a finger in the rectum, the vagina should be explored with a sound for foreign bodies. If the foreign body is of metal, a definite click can be felt and heard. If none are found or there is some doubt, the vagina may easily be explored by means of a Kelly cystoscope using a head mirror for light. This is easily accomplished even in infants under a year of age. Any foreign body found, of course, should be removed; safety pins, the usual offenders, are first closed, then removed. This should be done under anesthesia to prevent injury.

Non-specific purulent discharges may be treated by penicillin, locally, and/or estrogens, if needed; if preferred, these may be given by mouth, but the result is not as rapid nor as sure. The treatment of gonorrheal vaginitis in children has gone through the eras of local antiseptics, diathermy, estrogens, and sulphas, and at present penicillin is the treatment of choice. Estrogens are, however, still valuable in conjunction with the antibiotics in effecting a restoration of the vaginal epithelium.

Principles in the treatment of trichomonas vaginitis consist in readjusting the vaginal pH to the acid side, and supplying lactose to aid in the increase of the normal vaginal flora. Lactic acid, 1/2 teaspoon to a quart, or white vinegar, one tablespoon to a quart, is used as a douche. Beta-lactose in capsule or in tablet form is used in conjunction with the douche.

There are a number of jellies on the market which are helpful adjuncts in treatment; among them are acid jel, nylmerate, merpectogel and triple sulphajel. These latter are also helpful in clearing up non-specific vaginitis. Insufflation with powder is not advised as it is dangerous and there have been several deaths reported in the past three years from the use of this method. Monilial vaginitis, identified by its association with the cottage cheese-like material on the walls of the vagina, and an irritating discharge, and culture if needed, has always been dif-

difficult to treat. Until recently, the best treatment was to swab the vagina and vulvar opening two to three times a week with five per cent gentian violet. Cure was especially difficult to achieve when the condition occurred during pregnancy, and recurrences were frequent.

Last year, Alter, Jones and Carter, acting on a previous observation by Keeney and his co-workers on the fungistatic properties of the propionates, prepared a jelly-like mixture containing several of the propionates and propionic acid in a tragacanth base. This was successful in curing 80 per cent of their non-pregnant patients and 39 per cent of their pregnant patients, in one series of treatments. An applicator full of jelly is inserted into the vagina, night and morning, for a period of two to three weeks, and then the patient discontinues all treatment for two days and returns for examination. If the patient is asymptomatic, and there are no physical signs and the cultures are negative, she is considered cured. Several companies have jellies of this type on the market; the one that I have used, with excellent results in some stubborn cases, is propion-jel (Wyeth).

In relaxation and displacements, you are all familiar with the use of the pessary in the post-partum retrodisplacements, and the diagnostic value of the pessary in determining the cause of the backache in the patient with a movable, retrodisplacement. Certainly in every case where it is possible this type of conservative treatment should be used before operative treatment is advised. All too frequently we see patients who have had the uterus fastened well forward, but still have the same backache that they complained of before operation, because the backache was due to some condition other than the retrodisplaced uterus. If the symptoms clear up with the pessary, a trial of at least six months is indicated. If, on removal of the pessary, the uterus returns to the retrodisplaced position and the symptoms return, then the patient has the choice of continuing with the pessary or having the condition corrected by operation.

In cases of cystocele or prolapse where, for some reason, operation is either contra-indicated or refused, there are two types of pessary that are especially helpful. One, which the patient can insert and remove herself, is the Gellhorn pessary. This has all of the advantages of the older Menge pessary and none of the disadvantages. The newer ones are made of a clear, smooth, plastic material which does not irritate the cervix or vaginal walls. The patient removes it at night, takes a douche and reinserts it the next morning. We have many elderly women with prolapse or cystocele who, for some reason, are not in the operative category, who have used this type

of pessary for years with complete relief of symptoms.

When the patient prefers to have a pessary which can be left in and checked in the office every two to three months, the Gehrung pessary, if it can be used, is the one of choice. It has the following advantages: (a) it derives its support from the remnants of the levator sling, laterally, thus avoiding pressure on the rectum which, especially in older patients, sometimes causes difficulty with normal bowel action; (b) it gives broad support under the bladder and prevents the decensus of the uterus; (c) it is very light and, if properly fitted, the patient is not conscious of its presence.

In the cases with cystocele and prolapse, the patients frequently complain of some incontinence of urine on sneezing or coughing. The usual procedure in these cases after cystoscopic investigation has always been operative repair with special sutures placed to repair the sphincter and the trigone muscles. An article by Rashbaum and Mandelbaum on *Nonoperative Treatment of Urinary Incontinence in Women*, in a recent issue of *American Journal of Obstetrics and Gynecology*, offers some valuable suggestions in the diagnosis and treatment of these cases *before* resorting to operation.

They found that false incontinence due to irritative lesions of the vesical neck and bladder were frequently confused by the patient and the doctor with stress incontinence, and in some of the cases both conditions were present. They found that the usual continence test, of instilling 250 cc. of saline into the bladder and then having the patient cough or sneeze while in the lithotomy and erect positions, was not a reliable index to measure incontinence, for the patient may voluntarily contract her external sphincter and prevent leakage, where as under ordinary conditions she is not on guard, so to speak, and the leakage occurs before she can consciously prevent it. In 23 cases which had been operated upon for incontinence without being cured, these workers cured eight and improved an additional seven by *office treatment*. The procedure they advise as a therapeutic test to differentiate false from true stress incontinence prior to surgery is as follows: the urethra is dilated with graded Hegar dilators from No. 6 to No. 9, once weekly. After the urethra has been dilated for about five minutes, a topical application of five per cent silver nitrate is made to the urethra, bladder neck, and trigone. This may be done with or without an endoscope. An attempt is made to strengthen the voluntary urinary sphincters by having the patient start and stop the urinary stream several times during urination. Ephedrine, 25 mg., is prescribed three times a day, and this helps to contract the internal sphincter and at the same time de-

press the contraction of the bladder. Of the 82 cases of urinary incontinence treated, 40 per cent were cured, and an additional 41 per cent were improved. These results certainly warrant a trial of this treatment before advising surgery.

In a few minutes left I should like to mention briefly two recent additions to our knowledge in the field of sterility and one in the treatment of dysmenorrhea. In treating sterility cases, the importance of determining the exact time of ovulation is obvious. The clinical signs which are known to coincide with ovulation are: first, a clear mucoid discharge due to the dissolving of the cervical plug and, second, in some women there is slight mid-menstrual bleeding and pain. Various diagnostic procedures which have been used to determine the time of ovulation are: the vaginal smear, a study of the electrical potential changes, and blood and urine levels of the various hormones concerned, but none of these are satisfactory from a clinical standpoint. In 1940, Rubenstein, after studying the basal body temperature through the menstrual cycle, found that there was an initial drop of half a degree followed by a rise up to, in some cases, a degree, at ovulation time. The subsequent use of this technique by many workers has shown that it is very helpful in some cases, but in many cases no typical curve is found.

In cases in which the temperature curve is of no value, a rat test reported by Farris in 1946 may be done. Two cc. of the morning urine specimen are injected into immature rats. The rats are killed in two hours and the color of the ovaries is compared with graded shades of red of the Munsell color system. The first month is used as a control to determine if and when the patient ovulates. The following month, coitus or artificial insemination is performed on the last day of the reaction. Farris, in a recent article in the JAMA compared this test with the basal body temperature and found the rat test a much more accurate index of ovulation time. The temperature curve was accurate in only 45 per cent of the cases.

The *other* new factor which may prove of value in the treatment of sterility cases where the cause is due to some fault in the semen, is the use of hyaluronidase. This enzyme is a component of normal

seminal fluid, and it possesses the property of dispersing the follicle cells of the corona radiata of the mammalian ovum, a prerequisite to penetration of the sperm. McClean and Rowlands were able to accomplish pregnancy in rabbits by artificially inseminating rabbits with sperm samples, ordinarily numerically inadequate to produce fertilization, with added hyaluronidase. Werthessen, in the human, found a direct relation between the sperm count and the hyaluronidase content of the semen, and this was confirmed by Kurzrok. It was felt that in couples wherein the husband's spermatic count is a bit deficient, the addition of hyaluronidase might increase the mathematical chance of penetration of the ovum. Results to date have been disappointing but the techniques are still in the experimental stage and judgment should be reserved until an adequate number of cases has been reported.

Finally, I should like to mention a symptom-complex seen in certain cases of dysmenorrhea, which has been found to be due to a retention of the sodium ion. These patients may have any combination of the following symptoms: dysmenorrhea, nausea and vomiting, headache, edema of the extremities, and in some cases a gain of weight just before the period, with a loss of weight during the period. Greenhill and Freed, in studying the water balance, found that the rise in the sex sterols (estrone) in the blood toward the end of the cycle caused a retention of the sodium ion. This, in turn, caused an intracellular retention of water in the tissues, and in cases where, for some reason, the reaction was exaggerated, there was actually tissue edema. They felt that the symptoms mentioned above were due to edema in the various organs, i.e., uterus, intestine, brain, etc. In a group of cases presenting this syndrome, they eliminated salt for the diet and gave ammonium chloride, 7½ gr. t.i.d., the last two weeks of the cycle and obtained remarkable relief of symptoms. I have been using this treatment in selected cases, many of whom were not relieved by other treatments, and the results are excellent. In patients with this group of symptoms, it is usually, though not always, found that the patient is a heavy salt eater, and as long as they follow the salt-free program they are relieved.

Strictures of the Bile Ducts*

Thomas G. Orr, Jr., M.D.

Kansas City, Kansas

Strictures of the bile ducts may be neoplastic, infectious, or traumatic in origin. Our present concern is with the last two types. The most common cause of gall duct stenosis is accidental injury during surgery of the gall tract, usually cholecystectomy. The resultant stasis of the bile predisposes to cholangitis with its symptoms of chills, fever, pain, jaundice, and malaise. The best method of reducing the incidence of this condition is to minimize the possibility of its occurrence. The relative frequency of anomalous arrangements of blood vessels and ducts is an important predisposing factor in surgical damage to the extrahepatic ducts.

The obvious answer to the avoidance of this catastrophe is adequate visualization and definite identification of all structures involved in the biliary surgical procedure contemplated. Arthur Allen¹ in 1945, recommended excision of the gall bladder by dissection from the fundus downward as a technique designed to prevent damage to important structures. This technique has the disadvantage of requiring most meticulous hemostasis, for if the view is obscured with blood, it holds no advantage over the more common retrograde method. The method of fundus dissection downward is particularly suitable for acute cholecystitis when edema and periductal infiltration obscure the identity of the ducts.

The results of injuries to the common bile duct generally fall into two groups:

1. Those which become jaundiced within a few days after operation, or drain bile externally or into the peritoneal cavity.

2. Those which do well postoperatively for a few weeks or months before developing jaundice, chills, and fever.

Those patients in the first group comprise the instances in which the common duct has been ligated, or otherwise damaged at operation, resulting in immediate obstruction or drainage of bile into the abdomen. This type of injury occurs frequently when the cystic duct is very short. In such a case, when traction is placed upon Hartman's pouch, the tenting of the common duct makes it resemble the cystic duct, especially when it is small in diameter. Such a situation may result in erroneous ligation of the ends of the common hepatic and common bile ducts in a common ligature. The common hepatic duct may also be mistaken for the cystic artery and ligated.

In the second group are the partial strictures which may occur when the tenting due to traction results in ligation of only a portion of the duct wall. Into this group also fall those cases in which the common duct is inadvertently clamped in careless hemostasis, and in which collections of bile about the ducts with subsequent infections may produce fibrosis and strictures. All of the cases to be discussed fall into both of these groups.

Following are case reports of 13 patients treated at the University of Kansas Medical Center in the last five years.

1. Hospital No. 103907—This patient was a 39-year-old white female who had a cholecystectomy 11 months prior to her admission in March, 1943. She drained bile for two months following cholecystectomy and was apparently well until February, 1943, when she developed jaundice. A stricture was found at the upper end of the common hepatic duct. Her treatment consisted of a choledochoplasty over a T-tube with the two arms of the T in the right and left hepatic ducts and the other end in the distal segment of the common duct. She was re-admitted one month after her first admission, with cholangitis, multiple liver abscesses and a subphrenic abscess. She died one month after the second admission following exploration for a liver abscess. An autopsy was performed.

2. Hospital No. 110992—The second case was a 33-year-old white female, who had a cholecystectomy in 1943. She continued to complain of right upper quadrant cramping pain, eructations, and jaundice postoperatively. In February, 1944, a small subhepatic abscess was drained in this hospital. Again she was admitted in April, 1944, with a diagnosis of subhepatic abscess and fecal fistula. She recovered from her acute infection and was discharged. She was re-admitted in May, 1944, with jaundice. At operation a fistula was found between the common bile duct and colon. Distal to the fistula was a stricture of the common duct. The fistulous tract was freed and anastomosed to the duodenum over a rubber tube. In April, 1945, she was re-operated upon in another clinic and an anastomosis between the common hepatic duct and duodenum was made over a vitallium tube. Since then she has not been heard from.

3. Hospital No. 116318—The third case was a 66-year-old white male, who had a cholecystectomy 16 weeks prior to admission in November, 1944. He entered with a biliary fistula. At operation the

*From the Department of Surgery, University of Kansas Medical Center, Kansas City, Kansas.

posterior wall of the ductus choledochus was found intact. The anterior wall was destroyed and the opening communicated with the fistula to the anterior surface of the abdomen. The defect was repaired over a T-tube, the latter being employed in a manner similar to that following exploration of the common duct. The T-tube was removed on the tenth post-operative day. He is still having recurrent pain, vomiting, and jaundice every two or three weeks, due probably to periodic, incomplete obstruction, or cholangitis, or both.

4. Hospital No. 118017—The fourth case was a 54-year-old white female, who developed a stricture eight months after cholecystectomy. She was admitted November 24, 1944. A section of the common duct was completely destroyed and a dilated common hepatic duct was found. A satisfactory anastomosis to the duodenum was made over a portion of rubber tube three cm. long for a splint. Her postoperative course was uneventful. Since dismissal she has been working daily and is completely well.

5. Hospital No. 119682—The fifth case was a 33-year-old white female with a post-cholecystectomy stricture of two years duration. A choledochoduodenostomy was done in 1945 over a Y-shaped vitallium tube, placed in the stump of the common hepatic and right and left hepatic ducts. She was well for almost three years when she developed abdominal discomfort, fever, chills, and jaundice. She re-entered the University of Kansas Medical Center in January, 1949. Exploration revealed the vitallium tube to be plugged with biliary concretions. The tube was removed and a Roux-Y technique of hepaticojejunostomy was done over a T-tube placed in the common hepatic and right and left hepatic ducts (Figure 1). The tube was passed through the wall of the jejunum and abdominal wall for temporary drainage. It was removed on the 12th post-operative day. Her post-operative course was uneventful.

6. Hospital No. 120076—The sixth case was a 61-year-old white female with a known history of injury to the common duct at cholecystectomy in 1942. She developed a stricture and was operated upon elsewhere. Symptoms of stricture recurred and she entered this hospital in February, 1945. She died of acute bacterial endocarditis before operation could be attempted. An autopsy showed a choledochoduodenostomy with stricture of the common duct.

7. Hospital No. 121573—The seventh case was a 53-year-old white male with a history of common duct stricture following cholecystectomy for 26 months prior to admission in April, 1945. A reconstruction of his common hepatic and common ducts was made over a vitallium tube. Jaundice never

completely disappeared and he was readmitted to the hospital February 2, 1949. He had been deeply jaundiced for more than a year. He was operated upon again February 9, 1949. The vitallium tube was filled with concretions. The tube was removed and an hepaticojejunostomy was done by the Roux-Y method using a temporary splinting catheter as suggested by Allen.

8. Hospital No. 138705—The eighth case was a 29-year-old white female who had a common duct stricture of 15 years duration following a cholecystectomy in 1932, at the age of 15. Her stricture did not become manifest until age 20, five years postoperatively. During the next 10 years she had intermittent attacks of abdominal pain and jaundice. At operation in April, 1947, an incomplete stricture of the lower portion of the common duct was found. A side-to-side choledochoduodenostomy was done. A catheter was passed through the anastomosis and passed through the duodenal and abdominal walls for temporary splinting and drainage. The postoperative course was uneventful. At present she has some recurrent right upper quadrant pain, bloating, and indigestion. This may be the aftermath of the concurrent acute pancreatitis which she exhibited while hospitalized.

9. Hospital No. 145440—The ninth case was a 31-year-old white female who had a cholecystectomy in November, 1945. A subhepatic abscess was drained in December, 1945. In January, 1946, she was treated for biliary fistula and cholangitis. In April, 1946, she was operated upon for a biliary fistula and stricture of the common hepatic duct. A stone was removed from the ampulla through the duodenum. The duct was reconstructed over a straight vitallium tube. She was admitted to the hospital for a fourth time in December, 1947, for acute cholangitis, from which she recovered in six days. She experienced recurrence of chills and fever in one month, and had an exploratory operation elsewhere in August, 1948. The vitallium tube was not removed. Since then she has had recurrent attacks of jaundice, chills, and fever.

10. Hospital No. 142432—The tenth case was a 64-year-old white female who had a cholecystectomy with a T-tube drainage of the common duct in this hospital in May, 1947. A stormy convalescence followed with abdominal distension. There was bile leakage from the abdominal wound soon after the onset of distension. A biliary fistula persisted and she was operated upon again in August, 1947. A fistula of the common duct was found at the site of the T-tube drainage with sloughing of a section of the anterior duct wall. The T-tube had evidently been partially withdrawn from the common duct during convalescence, causing spillage of bile about the opening. This re-

sulted in partial destruction of the duct wall. A choledochoduodenostomy was done at the site of the defect in the common duct. The bell end of a No. 18 French catheter was passed through the anastomotic opening as a temporary splint to be passed spontaneously. This patient was reported completely well in January, 1949.

11. Hospital No. 143933—The 11th case was a 52-year-old white female who had a cholecystectomy in March, 1946. In October, 1947, she entered this hospital with a history of chills, fever, and jaundice of five days duration. At exploration a partial stricture low in the common bile duct was found. A side-to-side anastomosis was made between the upper portion of the common duct and duodenum over a portion of a No. 16 French

catheter, as a temporary splint. In January, 1949, her family doctor reported that she had no complaints referable to her stricture.

12. Hospital No. 147709—The 12th case was a 39-year-old white female who had a cholecystectomy in July, 1945. In April, 1948, symptoms of biliary obstruction developed. Operation revealed stenosis of the common duct and a choledochoduodenostomy was done over a T-tube with the long arm within the duodenum and brought out through the duodenal and abdominal walls. The T-tube was removed on the eleventh postoperative day. Her postoperative course was uneventful and she is asymptomatic at present.

13. Hospital No. 151257—The 13th case was a 35-year-old white female who had a cholecystec-

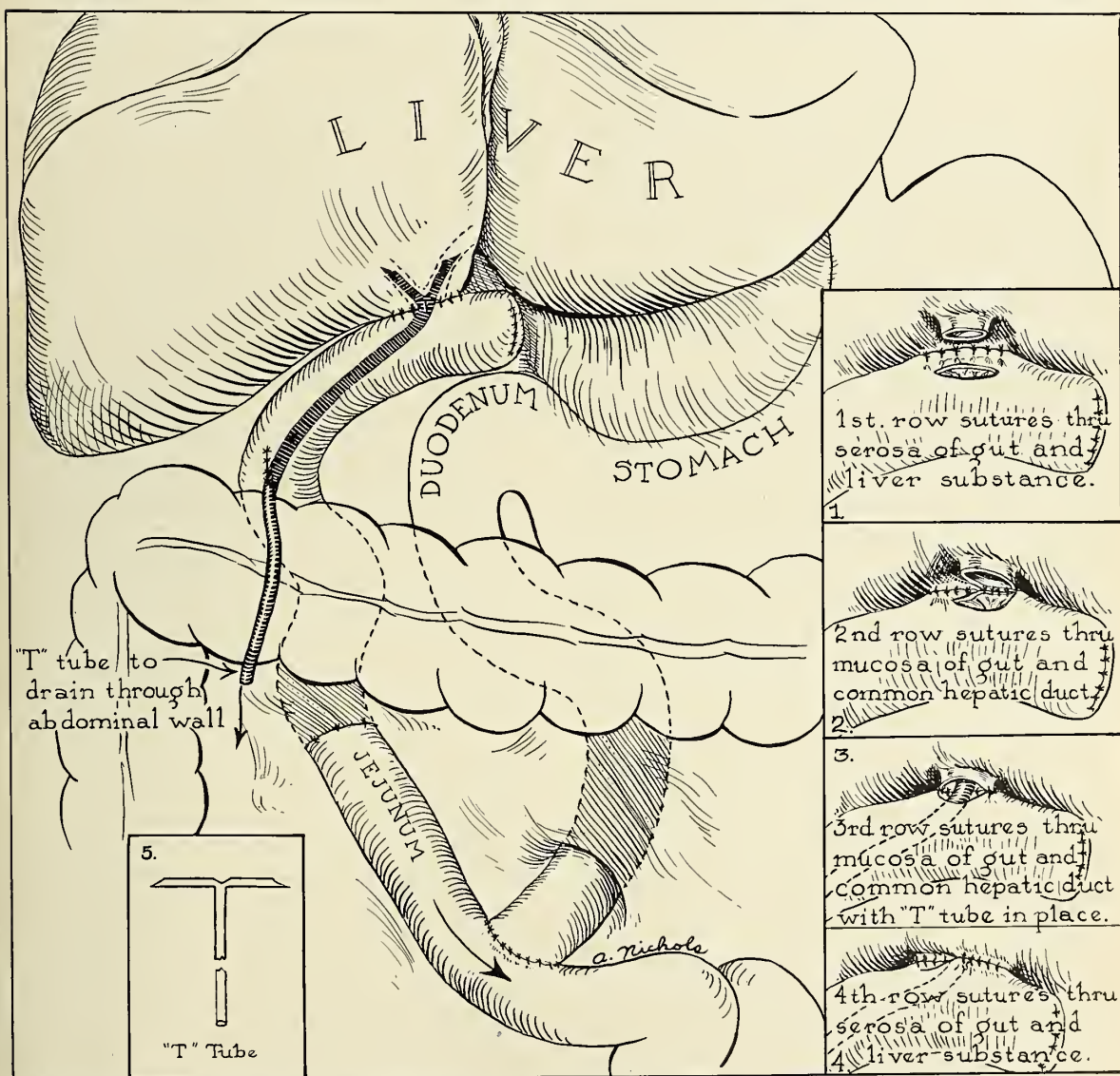


Figure 1. Roux-Y technique of hepaticojejunostomy. The anastomosis is made over a notched T-tube placed in the stump of the hepatic duct with the arms of the T in the right and left hepatic ducts. The tube extends to the surface through the jejunal and abdominal walls. It acts as a splint during healing and is removed on or after the 12th postoperative day.

Inserts 1, 2, 3, and 4 are sketches of the steps in the anastomoses of the hepatic duct to the jejunum. Inset 5 shows the notched T-tube. (Technic used in Case Number 5 by Dr. Thomas G. Orr).

tomy in 1945. She entered the University of Kansas Medical Center in June, 1947, with a bile duct stricture and cholangitis. She responded well to conservative therapy and no surgery was done. She was re-hospitalized in September, 1947, with jaundice, pain, nausea, and vomiting, which again subsided spontaneously. She was then explored and an incomplete stricture of the common duct was found, with calculi proximal to the stricture. The duct was reconstructed over a rubber catheter brought out of the duct distal to the site of the stricture. This tube was removed on the 16th postoperative day. She was again admitted in January, 1948, with a subhepatic abscess which was drained. Again in July, 1948, she required hospitalization for cholangitis which responded to conservative therapy. This patient is having recurrent attacks of cholangitis.

Numerous methods of treatment of bile duct strictures have been devised and advocated by many authors. The ideal method of direct anastomosis of the distal to the proximal stumps on each side of the obstructed area is, of course, applicable only when the obstructed segment is quite short or the duodenum easily mobilized. Very frequently a considerable gap exists between the proximal intact portion and the lower end of the common duct which prevents end-to-end approximation. To bridge this gap with elimination of further postoperative obstruction is the object of all of the various techniques which have been proposed.

When a large gap must be bridged, mobilization of the duodenum to expose the retroduodenal portion of the distal ductus is recommended by Cattell². Another fundamental method is the Roux-Y technique, advocated by Allen. This consists of dividing the jejunum below the ligament of Treitz, anastomosing the end of the distal segment to the stump of the bile duct, and uniting the proximal end of the jejunum to the distal about 24 inches below with an end-to-side anastomosis. Allen used a bell-mouth catheter for a splint at the site of the anastomosis which extended through the jejunal and abdominal walls so that it could be withdrawn. Pearse³, in 1942, introduced and recommended the use of vitallium tubes in the repair of strictures of the bile ducts. He considered these tubes especially applicable when mucosa-to-mucosa repair was not possible.

In 1945, Cole and his associates⁴, suggested the use of vitallium tubes and the Roux-Y principle, and in addition the construction of valves in the defunctionalized portion of the jejunum. The valves were made either by an hyperbolic flap, vertex directed distally into the lumen of the gut, or by simply infolding the entire thickness of the jejunal wall with two or three transverse rows of

interrupted Lembert sutures. Subsequently, in 1948, Peterson and Cole⁵ showed, by animal experimentation, the latter method to be permanent, while the former was not. Recently, Gridley and Mann⁶ have been using tubes of polythene, an elastic, very smooth hydrocarbon, with encouraging results in experimental animals. Zinninger⁷ reported his work in 1948 in which he described direct anastomosis of the bile duct to the duodenum, in some instances over a vitallium tube. He states that mucosa-to-mucosa approximation is essential to success. Due to the frequent collecting of bile concretions in the metal tube, he believes a removable splint is superior to a permanent. Neibling and Walters⁸ reported eight cases of obstruction of vitallium tubes with biliary sediments, requiring their removal.

Cole, Reynolds, and Ireneus⁹ have described recently a new technique of bile duct reconstruction when no proximal bile duct stump could be found. First, the liver is aspirated to locate the intrahepatic ducts, and then a tunnel is made through the liver to the ducts. The jejunum is then divided by the Roux-Y technique and the end of the distal segment is prepared with a sleeve of free mucosa. The flared end of a catheter is then sutured into this sleeve, which is in turn inserted into the tunnel through the liver and held in place with stay sutures placed in the liver and its capsule. This accomplishes the mucosa-to-mucosa approximation so much desired. After serving its purpose as a splint the section of catheter is discharged.

Summary and Conclusions

Thirteen cases of stenosis of the bile ducts are presented and the results of their treatment reported. There were two deaths in this series, or a mortality rate of 15.3 per cent. One of the deaths was due to bacterial endocarditis, and not primarily to obstruction. Four cases, or 30.7 per cent, are reported well. Six cases, or 46.1 per cent, are still having symptoms, and one case has not been traced.

A discussion of the problems and principles of treatment of postoperative strictures of the bile ducts is briefly presented.

A review of the literature indicates that an end-to-end mucosa-to-mucosa anastomosis is the most desirable type of repair of strictures of the bile ducts. Direct side-to-side anastomosis of the common duct to the duodenum has been successful in many cases. When such repair is not mechanically possible the use of the Roux-Y principle appears at present to offer more hope of success than reconstruction of the duct over any type of tube. Vitallium tubes have been found frequently to collect biliary sediment and become obstructed. Temporary splinting with tubes seems to be preferable to the use of permanent indwelling tubes.

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Amebiasis: Experiences at a Veterans Hospital*

Rudolph Chess, M.D., and Nathaniel Uhr, M.D.**

Topeka, Kansas

The notion that amebiasis is a disease confined to tropical and subtropical climates has long been discarded. Though more prevalent in certain highly endemic regions it is, in fact, worldwide in its distribution. The over-all incidence of the infection in the United States is given as approximately 10 per cent of the population although the figure undoubtedly is somewhat higher for some of the southern states. Despite the advances in our knowledge of the epidemiology and management of the amebic infections, clinical amebiasis continues to be a challenge to the medical profession. The problem has assumed added importance with the return to this country of members of the Armed Forces from parts of the world where the disease is highly endemic. The many published reports from medical installations in various theaters of operation should prepare us for an increased incidence of the disease among our veterans, the situation being comparable to that experienced by British physicians during and following World War I when they were confronted with large numbers of infected troops returning from the near East.

Detailed information regarding the pathology and pathogenesis of amebiasis and description of the characteristics and life cycle of its causative agent, the *Endamoeba histolytica*, may be obtained from classical textbooks on tropical medicine.² A number of excellent reports describing the acute phases of amebic dysentery have been published in recent years.³ It is the purpose of this communication to discuss some of the clinical and diagnostic aspects of the chronic and latent forms of amebiasis with its complications, based on a study of 29 cases from the medical wards of the Veterans Hospital, Topeka, Kansas.

Admittedly, this is too small a group to lend itself to conclusive statistical analysis; nevertheless, the material is, in many respects, representative of

the type of case that may be encountered in daily practice. Furthermore, the wide variety of their manifestations emphasizes vividly the lack of uniformity in the over-all clinical picture so characteristic of chronic amebiasis. In the majority of cases the diagnosis of amebic infection had not been established prior to hospitalization though they had been under investigation and treatment by private physicians or in other hospitals. In the remainder, symptoms had persisted or recurred because of inadequate therapy or improper follow-up studies.

That recognition of the disease is still a problem is attested to by the multiplicity of diagnoses with which some of our patients were admitted. Among these were peptic ulcer, non-specific ulcerative colitis, functional disturbances of the gastrointestinal tract, gallbladder disease, anemia of unknown origin, malaria, undulant fever, rheumatic fever, acute surgical abdomen and, more commonly, psychoneurosis. The intensity of the infection varied from the benign clinical picture presented by the so-called asymptomatic cyst carrier to one of critical severity observed in acute hepatitis and hepatic abscess. The majority of the cases, falling between these extremes, represented colonic amebiasis with a varied symptom complex. None presented the classical picture of acute amebic dysentery and we did not encounter the eccentric forms such as the cutaneous or cerebral complications.

The following cases are illustrative:

Case 1. A 32-year-old white physician, ex-Army captain, complained only of lassitude and vague abdominal discomfort with flatulence. He had spent two years in the Pacific with a field hospital but had not been significantly ill during that time. The general physical and laboratory examinations were negative. Proctosigmoidoscopy disclosed a normal rectal mucous membrane. Microscopic examinations of the stools, however, revealed the presence of cysts of *Endamoeba histolytica*. Following a full course of therapy with emetine, diodquin, and carbarsone, the symptoms subsided. Repeat

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**From the Medical Service, Veterans Administration Hospital.

examinations of stools recently failed to show the parasites.

The mild non-specific nature of this patient's complaints is not untypical of the so-called asymptomatic cyst carrier. The former term "healthy carrier" is no longer acceptable since it has been shown by Faust⁴ and others that the bowel wall in these cases is the seat of either gross or microscopic alterations. There is, moreover, experimental and clinical proof that cysts of the asymptomatic carrier are thoroughly capable of reproducing the disease both in animals and in man.¹ It is precisely because of the lack of morbidity that the disease in these patients goes unrecognized and untreated and that they, therefore, become subject to possible later complications or act as a source of infection to others.

Case 2. A 27-year-old white farmer had spent two years in the Pacific where he first suffered with dysentery. Following his return to the United States he had three proven attacks of vivax malaria; he continued to have recurrent attacks of dysentery with six to eight watery, occasionally blood-tinged, stools a day. Symptoms were at times disabling so that he was unable to hold a steady job. Following admission to this hospital repeated examination of the stools following purgation was negative. Sigmoidoscopic examination disclosed generalized hyperemia of the rectal and sigmoid mucous membrane with pin point ulcerations. Microscopic examination of a specimen of mucous exudate, using the warm stage method, revealed motile trophozoites of *Endamoeba histolytica*. He was treated with emetine and oral amebicides and made an uneventful recovery.

Case 3. A 52-year-old college professor, an ex-colonel in the V. C., had spent two years in the CBI, where he suffered for six weeks with watery diarrhea which was treated with sulfonamides. Following his return to the United States he complained of almost monthly attacks of non-bloody diarrhea, abdominal cramps and flatulence lasting one to three days. In addition there had developed dyspepsia with right upper quadrant discomfort so that biliary tract disease was one of the admission diagnoses. An interesting bit of information volunteered by the patient was that a few days prior to each episode of diarrhea there would develop an itching, papular erythema in both periorbital regions which cleared up as the diarrhea subsided. Complete studies including sigmoidoscopy and x-rays of the gastrointestinal and biliary tracts were negative. Many cysts of *Endamoeba histolytica* were found in the purged stools. Treatment with emetine and oral amebicides was followed by subjective improvement. Examination of the stools 15 days following therapy failed to show the parasites.

Case 4. A 27-year-old machinist first experienced bloody diarrhea in December 1945 while in Manila. Following his release from the service early in 1946 diarrhea recurred with 10 to 12 watery, occasionally blood-streaked, stools a day. Symptoms reappeared intermittently until the fall of 1946 when they became severe enough to warrant hospitalization. He was observed at a veterans hospital where repeated stool studies failed to reveal parasites or other enteric pathogens. Treatment with dietary measures, antispasmodics and intestinal sulfonamides failed to influence the course of the illness. Following his discharge symptoms recurred with greater intensity. Associated with the diarrhea there were left abdominal pain, flatulence, progressive loss of weight and weakness. On examination at this hospital, the patient appeared chronically ill and somewhat wasted. There was marked tenderness on pressure along the descending colon. Sigmoidoscopic examination disclosed intense hyperemia of the lower bowel wall with numerous characteristic ulcers. Microscopic examination of muco-hemorrhagic scrapings showed motile trophozoites of *Endamoeba histolytica*. The complement fixation test for ameba was positive. Treatment with emetine, diodoquin and carbarsone effected a complete disappearance of symptoms. The patient's weight and strength returned rapidly, the appearance of the rectal mucous membrane became normal and examinations of the stools for parasites were negative prior to his discharge. The patient wrote to us recently that he was entirely well.

The above cases are examples of the more common run-of-the-mill variety of the intestinal form of the disease. For the sake of brevity, reports of other cases which might conceivably fall into this category have been omitted. One case, for example, presented an almost pathognomonic picture of peptic ulcer. In another case gastrointestinal symptoms were associated with dysuria, hematuria and secondary anemia; all symptoms disappeared following specific amebicidal therapy. Among other symptoms presented by some of these patients may be mentioned constipation alternating with diarrhea, headache, backache, low grade fever, anorexia, inability to concentrate, insomnia and anxiety. A number of these cases were labeled psychoneurosis on admission.

Case 5. A 35-year-old Mexican meat packer who had never been out of the country was given a CDD from the Army in 1944 with the diagnosis of psychoneurosis. He was hospitalized on three occasions during his Army service for attacks of watery diarrhea. There were infrequent recurrences of symptoms since his discharge. He came to this hospital because of a recent episode of watery diarrhea, severe left abdominal pain, chills, fever and

persistent vomiting. He was acutely ill, feverish and dehydrated. There were rigidity and marked tenderness throughout the left lower abdomen and the blood count revealed a moderate leukocytosis with normal differential. He was admitted to the surgical service as a possible acute surgical abdomen. On the day of admission he was seen by the medical consultant who suspected amebiasis. On proctoscopy there was hyperemia of the entire recto-sigmoid mucosa with multiple bleeding ulcers which were covered by a muco-purulent and hemorrhagic exudate from which numerous trophozoites as well as cysts of *Endamoeba histolytica* were recovered. The patient was treated with large doses of penicillin as well as a full course of the amebicides since it was felt that secondary infection played a part in the pathology. Recovery was dramatic. The patient has been in good health ever since.

The above case is cited because signs and symptoms presented by the patient suggested an acute surgical abdomen, a circumstance not infrequently encountered. It should be stated here, however, that in the majority of cases of this type signs and symptoms are referred to the right rather than left lower quadrant of the abdomen since the amebae have a predilection for the caecum.

Case 6. A 29-year-old farmer gave a history of an attack of nausea, vomiting and watery diarrhea while in the Aleutians early in 1943. Because of the persistence of symptoms he was returned to a general hospital in the United States from which he was eventually discharged by CDD with the diagnoses of constitutional psychopathic state, emotional instability and functional diarrhea. During the next 3½ years he suffered from almost constant diarrhea with eight to 15 watery, frequently bloody stools, a day, progressive loss of weight and strength, marked nervousness and insomnia, but never fever or abdominal pain. He was investigated and treated in two Veterans Administration hospitals, a number of private hospitals and by many private physicians. The diagnosis of non-specific ulcerative colitis was made repeatedly and the patient treated with various non-specific measures. He entered our hospital with a feeling of hopelessness. He appeared chronically ill and somewhat wasted but the physical examination was not remarkable except for slight hepatic enlargement. There was moderate leukocytosis with a normal differential. Sigmoidoscopic examination disclosed a scarred, rigid recto-sigmoid with inflamed mucous membrane and numerous ulcers of various size covered with muco-purulent and hemorrhagic exudate, which contained many vegetative and cystic forms of *Endamoeba histolytica*. Within 48 hours after the administration of emetine, diarrhea ceased for the first time in four years; the patient actually

became constipated. Because of severe asthenia on the fifth day, emetine was temporarily discontinued but resumed with smaller doses a few days later. Eventually a full course of the drug was administered with the adjunctive oral amebicides as well as penicillin. Patient made a complete recovery and regained a good part of his weight. When last heard from seven months following therapy he was in excellent condition and holding down a difficult job.

We report this case to stress the importance of making careful and repeated search for the parasite. Writers on the subject have emphasized the fact that amebic infection can lead ultimately to changes in the bowel indistinguishable from those seen in non-specific ulcerative colitis, the later pathogenesis being the result of secondary invasion by other bacteria. In retrospect, it is difficult for us to understand how the diagnosis could have been missed. We can only ascribe this either to a lack of awareness of the possibilities of the disease or an inability to recognize the parasite microscopically, if indeed the search was made. Certainly the patient could have been spared years of morbidity and financial loss.

Hepatic amebiasis is the most common complication of amebic infection secondary in incidence only to primary involvement of the large bowel. The incidence by some authors is given as high as 20 per cent. A history of diarrhea can be elicited in only 50 to 60 per cent of the cases and in only half of these can the cysts or trophozoites be found in the stools or by proctoscopy. It is noteworthy that the natives in regions where the disease is highly endemic are less liable to this complication than the transient population. One of the interesting features is the variation of the latent period from the time of initial infection to the manifestations of hepatic symptoms. Cases have been known to develop as early as a few days following an attack of classical acute dysentery while others have occurred after a period of 20 years.

The clinical picture in most cases reflects the severity of hepatic involvement and may range from the low grade insidious symptoms encountered in mild hepatitis to the acute dynamic illness seen in hepatic abscess. In a comprehensive discussion of the subject published recently, Klatskin⁶ classifies hepatic amebiasis into hepatic abscess and acute, sub-acute and chronic hepatitis. It is often difficult to make such arbitrary differentiation when one is mindful of the tendency for signs and symptoms to overlap with modulations in the underlying morbid process. There are as yet no precise diagnostic methods to differentiate in many instances the presuppurative stage of the disease from full-blown abscess formation. Early recognition and treat-

ment often spells the difference between cure and fatal outcome. We cite a few examples:

Case 7. A 23-year-old college student who had been in the South Pacific first developed bloody diarrhea in March 1946 while in the separation center following his return to the United States. He was admitted to the station hospital where examination of the stools revealed amebae. Treatment consisted of oral amebicides only. Since then he had suffered recurrent bouts of abdominal pain and diarrhea, chiefly watery, occasionally blood-streaked, occurring about every four months. These would subside with oral medication. Twelve days prior to admission there developed, for the first time, chills, fever and pain in the right lower chest. Treatment at the college infirmary produced no improvement and he was transferred to this hospital on September 25, 1947. The patient appeared acutely ill, complaining of intense right upper abdominal and lower chest pain. There were fever, moderate leukocytosis, and marked rigidity and tenderness of the right upper abdominal quadrant with a localized area of extreme sensitivity in the seventh intercostal space anteriorly. A chest x-ray showed normal diaphragms and no evidence of pleural or pulmonary disease. It was thought that the patient had developed acute amebic hepatitis with possible abscess. In view of the acute nature of the illness, the elapsed time since the onset, and with the knowledge that amebae had been demonstrated in the stools on previous occasions, specific therapy was begun immediately without waiting to perform sigmoidoscopy or stool examinations. In addition to the routine amebicides, treatment consisted of large doses of penicillin. Recovery was prompt and complete. When last heard from, five months following his discharge, the patient had had no recurrence of symptoms.

Case 8. A 29-year-old Indian semi-pro baseball player had spent 17 months in Germany but had never been ill. The present illness began three weeks before admission with the acute onset of bloody diarrhea and right sided abdominal pain. There were chills, fever, sweats and hiccoughs just prior to admission. He lost 40 pounds during the three weeks and on admission appeared gravely ill and dehydrated. There were high fever and leukocytosis. The entire right abdomen was rigid and tender and the liver was enlarged though its edge could not be outlined because of extreme tenderness. Chest fluoroscopy revealed a high right diaphragm but only slight limitation of its movements on respiration. On proctoscopic examination the rectal lining appeared intensely hyperemic with numerous ulcerations. Trophozoites of *Endamoeba histolytica* were demonstrated on microscopic examination. In addition to the usual amebicides, treat-

ment consisted of penicillin in large doses and fluid, electrolyte and protein replacement. At the end of 48 hours improvement was marked and by the tenth day there was complete recovery. The patient developed a voracious appetite, regaining most of his weight while still in the hospital. In a letter received from him a few days ago he stated that he was perfectly well.

Case 9. A 29-year-old married farmer had contracted malaria while in the South Pacific in 1944. He also had an attack of watery diarrhea which lasted four days. Since his release from the service in 1945 he had experienced six or seven attacks of chills and fever at various intervals. Assuming these to be caused by malarial infection the patient treated himself with atabrine. During 1946 he noticed progressive weakness and loss of weight. One month prior to admission he had an attack of chills and fever which did not respond to atabrine. A private physician was called who made a diagnosis of "flu" but treatment with sulfa drugs and salicylates failed to improve his symptoms. Fever continued, occasionally as high as 103.5 degrees; anorexia and weight loss progressed and the hemoglobin dropped to 60 per cent. Five days prior to admission the patient first experienced pain in the right suprascapular area aggravated by inspiration but not by motion of the shoulder girdle. On admission to the hospital April 17, 1947, pain in the shoulder and weakness were the most prominent symptoms. On physical examination the patient appeared acutely ill, pallid and underweight. There was no jaundice. Except for diminished respiratory excursions on the right, physical examination of the chest was negative. The liver edge was palpable six cm. below the right costal margin and markedly tender on pressure. The patient characteristically supported the flexed right forearm and arm against the right chest as if in an attitude of protection. There was moderate secondary anemia and leukocytosis of 19,300 with 85 per cent polymorphonuclear leukocytes. X-ray film of the chest showed the lungs to be clear but the right diaphragm higher than normal and rather markedly domed. Despite the absence of gastrointestinal symptoms, hepatic amebiasis was suspected. Proctoscopy disclosed an inflamed rectal mucous membrane with many areas of ulceration, the scrapings from which contained numerous trophozoites of *endamoeba histolytica*; stools contained many cysts. The patient was treated with a full course of emetine, diodoquin and carbarsone in addition to large doses of penicillin. Despite therapy, low grade fever and signs of diaphragmatic irritation persisted as manifested by cough and shoulder and chest pain. These were indications to us of continued liver damage, probably suppuration so that

surgical intervention was deemed necessary. A laparotomy was performed on May 12, 1947, and a large abscess in the antero-superior portion of the right hepatic lobe evacuated of a large amount of thick creamy sterile pus. A second course of emetine was administered during the period of convalescence. Recovery was uneventful. Prior to discharge from the hospital rectal mucosa had a normal appearance and the stools were negative for amebae. The patient wrote to us recently stating he was well.

The above cases are examples of varied clinical expressions of hepatic amebiasis. The last of these is vivid proof of the dictum that gastrointestinal symptoms are not a prerequisite for liver involvement. Prior to the days of emetine the mortality in this type of case was notoriously high. At present this drug assumes added importance since failure to respond to early treatment with full courses suggests hepatic abscess or its complications and becomes, therefore, a cue for surgical intervention. The surgical aspects of amebic hepatic abscess have been reviewed by Ochsner and DeBakey.⁷ We should like to stress here that once hepatic amebiasis is suspected treatment with emetine is instituted whether or not the stools or rectal scrapings show the presence of *Endamoeba histolytica*. It may be worth mentioning that none of the group had jaundice. A full battery of liver function tests was done in most cases but only occasionally were minor abnormalities reported. Our experience is in agreement with others who find that liver function tests are of little diagnostic aid.

Case 10. A 25-year-old white married musician first became ill while in the Army in April, 1943, with episodes of chills, fever, malaise, and muscle pains. He was admitted to an Army hospital where he remained for many months and from which he was discharged by CDD in October, 1943, with a diagnosis of rheumatic fever. He lost 55 pounds in weight over a period of six months. During the next 2½ years, which were characterized by recurrent episodes of illness alternating with periods of improvement, the patient was observed at a VA hospital and at a university medical center. A diagnosis of undulant fever was made at both institutions; at one of these a positive skin test for brucellosis was obtained. Symptoms during this time were essentially the same: fever, chills, sweats, weight loss, anorexia and weakness. In December, 1945, the patient experienced his first attack of abdominal pain; this was severe, continuous, localized generally to the upper half of the abdomen and associated with anorexia, vomiting and marked weakness. This lasted for a day or two, and was followed by a period of improvement during which appetite and strength returned. The attacks of pain,

usually following the above pattern, recurred with increasing frequency until admission to this hospital on March 20, 1946. Chills and fever were not prominent during the months prior to admission but sweating continued. He was treated by his private physician with transfusions of blood and plasma and by sulfonamides which had to be discontinued because of severe skin reaction. Examination at this hospital revealed a cachectic and acutely ill young man. The gums bled easily. There was a generalized shotty lymphadenopathy. The lungs were normal on clinical examination. Examination of the heart showed moderate tachycardia with a faint systolic murmur which was considered functional. The abdomen was scaphoid; the liver was enlarged to the umbilicus and the spleen edge was felt seven cm. below the left costal arch; both organs were firm, smooth and not tender. There was only slight fever at first, a moderate secondary anemia and a normal white blood count with normal differential; sedimentation rate was 35 mm/hr. (Wintrobe). Liver function tests were normal. Blood cultures were repeatedly sterile in various media; serum albumin and globulin were normal; stools showed no ova or parasites. The chest x-ray was normal. GI x-ray series performed on April 5 revealed no significant changes. On April 10, following the administration of dye prior to gallbladder studies, there developed severe right upper quadrant pain, diarrhea, abdominal distention with an unusual bulging in the region of the liver and lower chest. Fluoroscopic examination disclosed an elevated fixed right diaphragm with haziness of the pleural surfaces. On April 27 an extra-peritoneal exploration of the sub-phrenic region was performed but no free pus found. Liver biopsy done at this time was reported as showing chronic inflammatory change. Following operation there developed hydropneumothorax which gradually evolved into an empyema with a bronchopulmonary fistula. During the next three months needle drainage was performed repeatedly with removal of varying amounts of pus and replacement with penicillin. In addition to the usual supportive measures which included blood and plasma transfusions, intravenous protein hydrolysates and oxygen, the patient was treated with full doses of penicillin, streptomycin, sulfonamides and two short courses of emetine. Despite therapy the clinical course was a downhill one. There were periods of swinging pyrexia, rigors and sweats with further weight loss so that terminally the patient weighed only 100 pounds. There were occasional brief periods during which he appeared to rally but these were short-lived. The patient died on August 25, 1946, with signs of sepsis and peritonitis.

The salient findings at autopsy were: one large

thick-walled chronic abscess of the right lobe of the liver with numerous smaller abscesses; abscess of the diaphragm and of the sub-phrenic space with adhesions to the liver; markedly thickened right pleura with chronic pneumonitis and fibrosis of the right lung; multiple focal necrotic lesions in many viscera; ulceration of the ascending colon near the caecum, histologic section of which showed the trophozoites of *Endamoeba histolytica*.

The above case is reported in detail since it represents our only fatality and because of its chronicity and pleuro-pulmonary complications. It would be superfluous to discuss the many diagnoses that were entertained. It was not until three months after his admission here that the diagnosis of amebiasis was considered and even then so tentatively that emetine therapy was instituted in only a half-hearted manner. When one considers the pathology that had already developed, it is obvious that treatment with emetine and other amebicides even in large doses would have been futile.

An evaluation of the many drugs employed in the treatment of the amebic infections would occupy a monograph by itself. Hargreaves⁵ in his recent publication has given us one of the best and most comprehensive descriptions of the subject covering the historical, pharmacological and clinical aspects. The treatment adopted by this and other VA hospitals is the result of years of trial and error by many experts in the field and has been found most useful for the majority of cases. This consists of emetine given subcutaneously in doses of one grain (.065 Gm.) daily for an average of nine days; diodoquin, the iodine containing amebicide, is given by mouth simultaneously in doses of 10 grains (0.63 Gm.) three times daily for 10 days; this is followed by carbarsone, the arsenical amebicide, administered orally in doses of four grains (0.25 Gm.) three times daily for 10 days; diodoquin is then resumed for another 10 days, a course of treatment, thus, covering approximately a 30-day period.

It should be noted at once that there is wide divergence among clinicians both as to the choice of medication and dosage, some preferring one of the many other iodine or arsenic containing drugs which are on the market. It is no longer disputed that emetine is the drug of choice for eradication of the vegetative or trophozoite form of the *Endamoeba histolytica*; its effect on the cyst is negligible, whereas the oral amebicides are specific. Therapy with the oral emetine bismuth iodide together with chiniofon enemata, with which, as Hargreaves reports, excellent results have been obtained in Great Britain, has not had wide use in this country. We have not observed significantly adverse reactions from emetine; only two cases developed as-

thenia between the third and fifth day of therapy necessitating a discontinuance of the drug for a few days. Much has been written about the cardiovascular effects of emetine toxicity. Electrocardiograms were taken routinely in our cases prior to and during therapy; we encountered no cardiac complications.

Whereas a curtailed course of emetine might be given in certain of the milder cases of intestinal amebiasis or in the carrier state with good results, hepatic amebiasis requires larger doses. Our cases averaged 12 or 15 grains per course and we did not hesitate to repeat this after a rest period of one or two weeks if the clinical response was not satisfactory. The oral amebicides of course are also given. Concerning the surgical approach in hepatic abscess, most surgeons in recent years have preferred needle aspiration to laparotomy and drainage. In those of our cases presenting widespread involvement with secondary infection of the bowel wall or hepatic complication with fever, penicillin and other antibiotics were employed as adjunctive measures. Hargreaves uses penicillin and sulfonamides routinely in the chronic relapsing form of intestinal amebiasis. Proper dietary measures, supplemental vitamins and other symptomatic treatment are important factors in the total therapy.

From a study of the natural history of amebiasis one is impressed with the difficulty of eradicating the parasite in many cases despite adequate therapy, so that relapses are not uncommon. It is imperative, therefore, to follow these patients for a minimum of one to two years after discharge. In many clinics patients are urged to return every three to six months for stool examinations regardless of the presence of symptoms. With the routine established at this hospital the patient automatically returns for re-examination following a 90-day furlough. On discharge he is instructed to return should symptoms recur even in mild form. Subsequently, contact with the patient is maintained by correspondence.

Summary

1. An increase in the incidence of amebic infections is to be expected among veterans of World War II.
2. Chronic amebiasis occurs in diverse forms and its manifestations may be protean in character. Colonic and hepatic amebiasis are the types most commonly encountered.
3. An awareness of the disease and the ability to recognize the causative parasite microscopically are the chief requisites for diagnosis.
4. The clinical features and therapeutic management of amebiasis based on a study of 29 cases encountered in a veterans hospital have been presented, with a summary of a few illustrative case reports.

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Cancer Supplement with This Issue

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Tularemia: Report of a Case of Primary Tularemic Tonsillitis in Which Bacterium Tularensis Was Isolated from the Sputum

Robert A. Jordan, M.D., and Cora M. Downs, Ph.D.

Lawrence, Kansas

The case of tularemia reported in this paper is of unusual interest in two respects: first, in that the only demonstrable lesions in this patient were in the pharynx and tonsils; secondly, that the organism, *Bacterium tularensis*, was successfully isolated from throat washings upon inoculation into guinea pigs and subsequent culture on glucose cystine blood agar.

Tularemia rarely produces lesions in the mouth, tonsils or pharynx. It is even less common for such lesions to occur in the absence of overt tularemic involvement elsewhere in the body. Cases of primary tularemic pharyngitis or tonsillitis have been reported by Crawford,¹ McGovern,² Anschuetz,³ Waddell and Birdsong,⁴ and by Larson.⁵ Several authors^{6,7,8} have reported cases of tularemia in whom there were lesions of the mouth, tonsils or pharynx, either secondary to, or associated with such other manifestations as tularemic conjunctivitis, pneumonia, pericarditis, or ulceroglandular tularemia.

Isolation of *Bacterium tularensis* from the sputum has been reported in only a few cases. Freese, Lake and Francis⁶ reported a case of tularemic conjunctivitis from whom nose and throat swabs yielded *Bacterium tularensis* upon animal inoculation and culture. Francis⁹ reported four cases of pulmonic tularemia in which he was able to isolate the organism from the sputum by inoculation into guinea pigs. Johnson¹⁰ reported an atypical case of tularemia where *Bacterium tularensis* was isolated from the sputum by inoculation of the specimen into white mice and culture on glucose cystine blood agar. Ashburn and Miller¹¹ isolated the causative organism by similar methods from the sputum of a patient with pulmonic tularemia. Larson⁵ reported three cases of tularemia without pulmonary symptoms in which he was able to isolate the organism from the sputum by animal inoculation and culture.

Report of Case

The patient, a white male, age 23, was admitted to the hospital November 18, 1947, complaining of fever, headache, malaise, and sore throat of two days duration. He stated that he had been employed as a part-time technician in the tularemia research laboratory at Kansas University for sev-

eral months. On November 14, 1947, while transferring some liquid cultures of *Bacterium tularensis*, a cotton plug which had been placed in the bore of the transferring pipette became dislodged and the patient aspirated some of the culture into his mouth. Immediately he rinsed out his mouth with 70 per cent alcohol. His first symptoms were noted two days later.

The patient had received a series of three injections of the Foshay tularemia vaccine in December, 1946, and another series late in September, 1947. The last series was given approximately six weeks prior to the onset of his illness.

Physical examination upon admission revealed a well-developed young male adult who appeared only moderately ill. The temperature was 101.4°F., pulse 84, and respiration 20. There was moderate diffuse hyperemia of the pharyngeal mucosa. The anterior and posterior cervical lymph nodes were slightly enlarged and tender. The lungs were clear. The liver and spleen were not palpably enlarged.

A white blood cell count on the day of admission was 6,100 with 72 per cent neutrophils and 28 per cent lymphocytes. There were no abnormal findings in the urine. On November 19 a sample of the patient's blood serum agglutinated *Bacterium tularensis* in a dilution of 1:640. On October 17, 1947, 28 days prior to the patient's accidental aspiration of the tularemia culture, his agglutination titer had been 1:640. At the time of the accident, November 14, 1947, his titer was 1:320.

A roentgenogram of the chest on November 20 was reported as showing some peribronchial infiltration in the medial portion of the right lung base.

Specimens of the patient's blood were inoculated into guinea pigs on November 20, however, the pigs did not die. On the same day throat washings were obtained from the patient and inoculated by the intraperitoneal route into each of two guinea pigs. Both pigs died three days later (November 23) with typical autopsy findings of tularemia. Subsequent culture of the guinea pig organs yielded *Bacterium tularensis*.

A presumptive diagnosis of tularemia was made on November 20, five days after the onset of the illness, and treatment with streptomycin was started. The streptomycin was administered in a dosage

of 100,000 units (0.1 Gm.) intramuscularly every three hours. A total of 2,700,000 units of streptomycin was given. The patient responded well to treatment and was discharged from the hospital afebrile and free of symptoms November 25, 1947.

The patient returned as an out-patient December 1, 1947, complaining of malaise and soreness in the left side of his throat. The temperature was 99.2°F., pulse 80 and respiration 18. Examination of the pharynx revealed an ulcerated area over the left tonsil extending onto the anterior pillar. The ulcer was covered with a dirty gray exudate. A smear from the ulcer was negative for Vincent's organisms and a culture failed to reveal *C. diphtheriae*. An agglutination test of the patient's serum at this time was positive against *Bacterium tularensis* in a dilution of 1:1024.

Local treatment of the ulcer with silver nitrate resulted in no improvement. The patient was readmitted to the hospital December 4, 1947, under the assumption that his complaints were due to a continuation of the tularemic infection. On this basis treatment with streptomycin was again started in a dosage of 100,000 units intramuscularly every three hours for a total of 3,700,000 units.

Again on December 4, 1947, 19 days after the onset of the disease, throat washings were inoculated intraperitoneally into guinea pigs. One of the pigs died four days later with the typical findings of tularemia in the liver and spleen. The diagnosis was further confirmed by culturing *Bacterium tularensis* from the guinea pig organs.

The tonsillar ulcer healed rapidly under treatment with streptomycin. On December 10, 1947, the patient felt perfectly well and was discharged from the hospital as cured, 25 days from the onset of his symptoms.

Serum agglutination tests against *Bacterium tularensis* were positive in a titer of 1:2048 on December 8, 1947, and on December 15 had reached a high level of 1:16,384.

Subsequent follow-up of the patient has revealed no recurrence of symptoms. Agglutination tests on January 8, 1948, and on July 10, 1948, were both positive in a dilution of 1:2560.

Methods Used for Isolation of *Bacterium Tularensis* from Throat Washings

On the fifth day of the patient's illness (November 20) throat washings were obtained by having the patient rinse his pharynx with 10 c.c. of sterile physiological saline which was then deposited in

a sterile test tube and sent immediately to the tularemia research laboratory. The specimen was mixed with 0.2 Gm. of sulfadiazine to aid in the prevention of growth of other organisms. Five c.c. of the specimen were then injected intraperitoneally into each of two guinea pigs. Both pigs died three days after inoculation and were autopsied. The typical lesions of tularemia were found in the liver and spleen. Samples of the liver and spleen were then cultured on glucose cystine blood agar which produced *Bacterium tularensis* in pure culture.

Throat washings were again obtained from the patient on the 19th day of his illness (December 4, 1947), and were mixed with sulfadiazine as before. Two guinea pigs were inoculated intraperitoneally with five c.c. of the specimen in each. One pig died seven days later with typical autopsy findings of tularemia and *Bacterium tularensis* was isolated by culture of the organs. The other pig was spoiled before autopsy could be performed.

Summary and Conclusions

A case of tularemia is reported in which the only demonstrable lesions were found in the pharynx and tonsils.

Bacterium tularensis was isolated in throat washings from the patient by injection of the washings into guinea pigs followed by culture of samples of the guinea pig organs on glucose cystine blood agar.

Treatment with 2,700,000 units of streptomycin was not successful, producing only a brief remission of symptoms; however, a second course of 3,700,000 units of streptomycin given two weeks later was apparently effective in bringing about a rapid and complete recovery from the tularemia.

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CHILD WELFARE PAGE

Atelectasis of the Newborn
A Symptom of Underlying Pathology

IMPORTANCE

It is frequently considered to be the primary cause of a death in the newborn period, which it almost never is.

PHYSIOLOGIC ATELECTASIS

X-ray studies have shown that the lungs of all newborn infants will fail to aerate completely until the end of the second or third week. Premature and damaged infants will show more atelectasis, and more persistent atelectasis, than full-term healthy newborns.

PATHOLOGIC ATELECTASIS

When (to use the most frequent type as an example) the respiratory center of the newborn is depressed, atelectasis follows naturally. Such a depression may be brought about by intracranial hemorrhage, drugs, and anoxia during or after labor, among other causes. The center responds poorly to the blood CO_2 level, and sends an insufficient impulse to the respiratory musculature, which fails to expand the lung fully. The collapsed alveoli, cut off from oxygen, undergo anoxic damage and their capillaries become more permeable. In these areas, the substance of the lung becomes water-logged and a serous fluid oozes in the alveolar spaces. The fluid reduces air exchange and oxygen transfer, and the blood leaving the lungs is progressively less oxygenated. The anoxemia damages and depresses the respiratory center still further. The lung is thus prepared for further atelectasis and infection, and the infant for death.

Other processes may affect any part of this cycle. Congenital malformations of the CNS or simple immaturity may alter the response of the respiratory center. Tracheal obstruction, a massive heart, diaphragmatic hernia or subdiaphragmatic pressure interfere with pulmonary expansion even though CNS control is adequate. Extremely immature lung tissue will not expand. Pulmonary edema may be first provoked by irritation from inspired blood or meconium. Hyaline membrane formation may reduce oxygen transfer. The tissue of the lung may be severely damaged by natal anoxemia. The whole cycle may begin with pneumonic infection.

It is frequently difficult to say just what is the underlying pathology as several things may be very wrong at the same time.

PROPHYLAXIS

If the possibility is kept in mind that any baby may develop atelectasis, certain prophylactic measures readily suggest themselves. They are particularly important for premature and post-mature infants, offsprings of diabetics, Cesarean deliveries, twins and other especially susceptible babies.

1. Minimal use of sedative drugs that severely depress the fetal respiratory center (morphine, barbiturates, paraldehyde).
2. Minimal use of prolonged inhalation anesthesia, and maintenance of high oxygen levels when such must be used.
3. Continuous oxygen, and intermittent $\text{CO}_2\text{-O}_2$ mixture, in a heated incubator, for all susceptible babies, and after prolonged or traumatic deliveries.
4. Good nursing care.

TREATMENT

Every newborn infant with respiratory difficulty deserves at least the following:

- | | |
|------------------|---|
| <i>Diagnosis</i> | <ol style="list-style-type: none"> 1. A careful PHYSICAL EXAMINATION. 2. An X-RAY of the chest. 3. A LUMBAR PUNCTURE if indicated (and perhaps a subdural tap). |
| <i>Treatment</i> | <ol style="list-style-type: none"> 1. Skilled, meticulous, constant NURSING CARE. 2. OXYGEN, continuous, in a heated incubator, for an extended period. 3. $\text{CO}_2\text{-O}_2$ MIXTURES at frequent intervals to stimulate respiration. 4. ANTIBIOTICS and SULFONAMIDES to combat or forestall pneumonia. 5. Special measures for special cases: <ol style="list-style-type: none"> a. BRONCHOSCOPIC DRAINAGE for persistent obstruction. b. Prompt SURGERY for diaphragmatic hernia, tracheo-esophageal fistula and sub-dural hemorrhage. |

CANCER PAGE

Cancer of the Paranasal Sinuses

Cancer in this area is most common in the older age group with the average falling in the sixth decade of life. Over 75 per cent of the cases occur in the male. The majority of the cancers in this group will be found in the maxillary sinus. Occasionally the ethmoid cells will be involved primarily and only rarely the frontal or sphenoid cells.

The diagnosis is rarely made early because of the inaccessibility of the tumor. The early symptoms depend somewhat upon the location of the tumor. If occurrence is in the lower half of the maxillary sinus the first symptoms will likely be neuralgia or toothache. Occurrence higher in the antrum or in the ethmoid cells may first cause pain, nasal obstruction or nasal discharge, either purulent or bloody. Some degree of nasal obstruction often occurs early. Not infrequently the patient seeks medical advice only after facial edema and tumefaction have appeared. Chemosis or proptosis may be the presenting signs in a sizable percentage of patients. This usually does not mean intra-ocular invasion but simply pressure from the extra-ocular approach of the tumor.

Roentgenographic changes are important, but are manifest relatively late in the disease. The radiographic demonstration of bone destruction superimposed upon an opaque paranasal cell or group of cells is practically pathognomonic of cancer.

There is no authentic evidence to support the theory that chronic sinusitis is a precursor of carcinoma.

The majority of these tumors are epidermoid carcinomas.

Treatment consists of a combination of electrocautery and intracavitary Curietherapy utilizing radium element. External deep roentgentherapy offers a supplemental method of treatment or in some cases may be used as the sole method of treatment particularly in the more advanced "poor operative risk patient."

Reported five-year survivals vary between 20 and 40 per cent.

PRESIDENT'S PAGE

Dear Doctor:

The Kansas Medical Society needs the active cooperation of all its members. One of the opportunities for service arises in committee activity. Although assignments are published in this Journal they are not closed, and any member interested in the activities of a committee is invited to notify the executive office of his willingness to serve. I sincerely hope that many will offer their help and that the final list will be considerably longer than it appears at present.

You will note that the president-elect and both vice presidents have been given direction over committees with broad responsibilities. This was done to give continuity to Society projects during the years ahead and to enable these officers to plan now for the future. I know they will appreciate your suggestions as will all chairmen and as I most certainly do myself.

This high honor is at once the greatest inspiration that can come to a physician and also a most humbling experience. My responsibility, however, cannot be discharged properly unless it is shared by us all. There is the responsibility which we owe to our patients, another which we owe to our profession and a third, involving our very special obligation as citizens, to our community, state and nation.

If we will all approach these responsibilities with a conscience, then I know it will be a wonderful year for the committees, for the Society and for the people we serve. I pledge my entire effort toward that goal and with your help and guidance, working together, we shall succeed.

Sincerely,

Haddon Peck, M.D.

EDITORIAL COMMENT

Something for Something

This is an example of how the administration plans to socialize medicine by proclamation where legislative processes fail. On June 20, 1949, Mr. Truman notified the Congress that a Department of Welfare would be established in his cabinet to take over the functions currently conducted in the office of the Federal Security Agency. This includes health and the United States Public Health Service. Rumor has it that Mr. Oscar Ewing will be offered the post.

It is a presidential order which will become effective on August 19 unless one house of Congress acts to reject it. It is a back door approach designed to by-pass the legislative branch of the government in as much as the only action left for either the House or the Senate is one of negation. If the Congress does nothing the order will be placed into effect.

Suppose this happens, suppose Mr. Ewing becomes a cabinet member in charge of health and social security, and children's affairs, and education, etc., then what? Look at Mr. Ewing's record.

Take education, for instance. Find out why Dr. Studebaker, long time esteemed director of the United States Department of Education, resigned shortly after Mr. Ewing became his superior. Did you ever take the time to read the text books your children are studying in high school today? Look at the *American Way of Life*, revised edition, a compulsory text in every Kansas high school. Read on Page 664 that "...millions of people have diseases and deformities that can be cured. Medical care is needed by everybody, but not all can get it. Doctors, nurses, and hospitals are too costly for millions of Americans... Many people believe that *socialized medicine* is one answer to America's health problem, a system of medical care for all..." Read Pages 672-674 on pressure groups.

Or look at *Living in the Social World*, revised, another text used in Kansas. Read Page 328 on "...unrestricted capitalistic competition..." and on 373-375 a report on communism. The authors speak of radicals who want to overthrow our government, "Whether right or wrong, great numbers of people have come to believe that some changes need to be made in the plot of the economic drama in order to bring about a more equitable distribution of goods"

As a member of the president's cabinet Mr. Ewing would have more power over the education of your children than he has today. Kansas rejected many books that are used in other states. Now Dr. Studebaker knew what was in these books, whether Mr.

Ewing does or not, but then Dr. Studebaker isn't working there any more.

Recall Mr. Ewing's attitudes toward medicine and health. Look at his recent report to the president on this subject. He has a solution for the high cost of medical care. He proposed to solve the problem of physician distribution, and best of all, he will prevent thousands of needless deaths that annually occur in the United States. Those represent his qualifications for this appointment, his analysis of why he considers himself fitted for this job. He proposes to give the patient better medical care for less money and the physician more money for less work. And there you have it, your new benevolent health dictator.

As this is written there is still some doubt among certain persons that Mr. Ewing is capable of doing all those things or whether there will be a cabinet post of welfare at all. Medicine held to the hope that the Hoover report would be followed, that a cabinet office of Health under a qualified physician might be established. The president's circumvention of this plan is an act of desperation requiring desperate counter measures. Only time, August 19, will provide the answer. But suppose the president succeeds and Mr. Ewing becomes the cabinet member of Welfare, then what?

For one thing, Mr. Ewing will then more completely than ever dominate the United States Public Health Service and the money Kansas receives through that source. Which brings up the question of who is giving whose money away. Certainly some states, perhaps most, pay more into Washington than is returned, and yet these federal health grants come back with strings attached as though they were gifts. It appears to be something for nothing, but in the hands of a man of Mr. Ewing's philosophy on health, the states will soon learn that accepting the return of a portion of the money they have given will be something for something.

It will be something small for something large. It will mean the acceptance of a trinket in exchange for an heirloom. We will have sold with dollars the freedom we bought with lives. And that is something for something!

Kansas is proud of its Board of Health and the incalculable services it has rendered the people of this state. But why in heaven's name may Kansas not purchase its own public health services and pay for them directly? Why must this money first be sent to Washington for Mr. Ewing to divide? Why should he give back a part of this money and then tell Kansas that its use must be according to his

direction or all will be kept from us? The Kansas legislature is realistic and most certainly would not permit curtailment of needed health activities.

Then this state could stand before the bureaus in Washington and turn down the offer of something for nothing. Pay its just share for the operation of the federal government, yes, but pay directly the cost of its own internal operations. Fantastic, perhaps, in the light of current trends in economic thought, but when you stand apart from the noise and view the subject dispassionately it isn't fantastic at all. Suppose this was your personal money. Would you not prefer to evaluate your own needs and then buy your own goods with your money?

That is buying something you want with something you have. Mr. Ewing's plan is to permit you to buy something he wants you to have in return for something you would not willingly exchange for his gift. In the end you will get what you did not ask for at a price you never dreamed could be exacted.

Pure Food and Drug Act

The federal Food, Drug and Cosmetic Act became law in October 1940 after having failed to pass the Congress in at least 80 previous attempts. This act, designed for the safety of the public, controls not only the contents but in a number of instances also the usage of drugs, and in that way affects the physician and the practice of medicine. Dr. Austin Smith of the A.M.A. recently spoke on how the Food and Drug Act affects the physician and it is from his paper that the following remarks are taken.

The law as such makes no mention of the practice of medicine, nor has court action ever established the physician's responsibility under this act. There are, however, regulations governing the physician's prescribing habits, and especially does the act appear to apply to those physicians who dispense their own medicine. As in other laws, ignorance of the regulations will not offer a defense. It seems, therefore, that each physician will wish to acquaint himself with these provisions, and especially is this true of those physicians who dispense drugs in the course of their practice.

For instance, a verbal order to a pharmacist does not give him the authority to fill a prescription. Today a prescription must be presented to the pharmacist in writing, and unless specific instructions are given on the prescription the pharmacist is not at liberty to refill a prescription for the patient. Any drug bearing the prescription label must be dispensed only upon the prescription of a physician. If this is sold otherwise, the pharmacist takes full responsibility for so doing.

As to dispensing physicians, Dr. Smith warns that

certain drugs must not be given to a patient unless the package contains a warning as to the possible effects of the drug. At first the administration required this only for thiouracil but since then has demanded similar warnings to be placed on packages containing pentaquine and other preparations. It appears that since this precedent has been established the requirement will become more general and, if violated, the physician might be caused considerable embarrassment.

There are other factors that may cause concern. For instance, requirements under the law are constantly being changed. By way of example, salt substitutes used as dietary supplements were recently declared drugs and placed under control of the Food and Drug administration. That means that from now on they may be dispensed only upon prescription, and if the administration wishes to prosecute violators of this regulation they have the authority to do so at any time.

Dr. Smith points out that while the law does not directly apply to the practice of medicine, neither does it intend to protect the physician or to make the practice of medicine easier. The law is aimed at the protection of the public and where this effort inadvertently complicates the practice of medicine for the physician the administration registers no concern. The law is constantly being modified, and even though there is no record of cases having been brought against physicians for the violation of this act, this might occur at any time. Dr. Smith recommends that each physician, and especially those who dispense their own drugs, make an effort to keep currently acquainted with the regulations. He states that complete information on this subject may be obtained from the Council on Pharmacy and Chemistry of the American Medical Association.

Committees for 1949-1950

Elsewhere in this issue of the Journal are published the committee assignments made by Dr. Haddon Peck, president. As always, your president is deeply concerned over the responsibility of selecting members for positions in which they are interested. A large portion of the program of this Society originates in committees, and after projects are approved by the Council they are then immediately reported to the House of Delegates for further action.

Many of these activities in which your Society is currently engaged have evolved in that way. The Kansas Blue Shield program, for example, resulted from many hours of committee planning which culminated in the adoption of the program by the House of Delegates. A great many other projects can be cited in the same manner.

It is impossible for anyone to be personally ac-

quainted with each of the members of the Kansas Medical Society, and committee appointments may therefore be made only from that group of physicians that the president believes would be interested in such activities. Dr. Peck would like it to be known that these committee assignments are not closed and that any member desiring to serve the Society will gratefully be given that opportunity if he will notify the executive office.

Many of the committees will continue projects that have been started but not completed during the past years. Others will arise that have not been attempted before. It is hoped that all committees will be active during the coming year and that many new programs, especially those in the interest of public service, will grow out of the meetings that are to come during the fall and winter months. Members serving on these committees give their time to the Society. This represents considerable sacrifice on their part but is also a contribution not only to medicine in this state but to all the people whom medicine and the Kansas Medical Society serve.

Medical Enlistments in the Armed Forces

The armed forces are still pleading for medical enlistments, but because there has been a considerable response there is probably less danger of a physician draft at present than at any time during the past two years.

The armed forces will need in the vicinity of 2,000 physicians before the first of the year, which number could easily be obtained if those physicians who received their education under the A.S.T.P. or the V-12 programs would volunteer. The Kansas Medical Society, through its Committee on Emergency Medical Care, has cooperated with the Secretary of Defense in an effort to encourage these young men to apply for a period of active duty. These men, of which there are some 45 in this state, received their education at government expense, so it appears only fair that they discharge their obligation to the government before older men will be required to serve again.

The Kansas Medical Society is ready to assist by answering questions and in other ways. Those who have already joined the medical society may obtain a leave of absence during their terms of service, which will provide for them all the benefits of membership without the necessity of paying dues or assessments. Those who are taking residencies will obtain assurance from the hospital that they may return to their residencies upon the completion of their military service. Their interests and their education will be carefully defended by the medical society.

This subject was discussed before the House of Delegates of the Kansas Medical Society in May of this year. A formal resolution was passed without dissent on that occasion, declaring that the Kansas Medical Society will cooperate with the American Medical Association and the Secretary of Defense in obtaining voluntary enlistments. Delegates further expressed their hope that those physicians who had received their education at the expense of the government would recognize their obligation to render to the government a period of service as payment for the benefits they had received. If the young men in this category will accept that obligation, they will thereby repay a personal debt to their government and will contribute toward upholding the record that physicians have established for service to the armed forces. In return for this the Kansas Medical Society offers its services to anyone having completed a tour of duty who desires to return to a residency or who wishes assistance in obtaining an attractive location within this state in which to practice.

Wins Cancer Fellowship

Dr. Edgar B. Taft, research worker at the University of Kansas Medical Center, was recently awarded a \$3,500 Damon Runyon fellowship by the American Cancer Society, on the recommendation of the National Research Council. During the first six months under the grant, Dr. Taft will work under the direction of Dr. Robert E. Stowell, head of the department of oncology, at the Medical Center. He will then go to Stockholm, Sweden, to work at the Karolinska Institute under Dr. T. Caspersson.

New Fee Schedule

The Kansas Vocational Rehabilitation Service wishes to call to your attention that examinations and medical care rendered for this division by members of the Kansas Medical Society will henceforth be paid for according to the fee schedule approved by the Society for veterans' services. It will be found that an aggregate increase of approximately 33 per cent will result from this action which was unanimously endorsed by the Medical Advisory Committee, of which Dr. Charles R. Rombold of Wichita is chairman.

Physicians making examinations or giving treatments at the request of the Vocational Rehabilitation Service should present statements upon completion of the work. The statement rendered should be in accordance with the Veterans Administration fee schedule. Additional copies of these schedules are available at the executive office of the Kansas Medical Society and may be obtained upon request.

SOCIALIZED MEDICINE

Editor's Note. This is the second of a series of articles dealing with federal compulsory health insurance. This series of articles is designed to supply the physician with factual information which might be used in a discussion on this subject. Subsequent issues will continue these discussions.

Is Medical Care Expensive?

The cost of medical care has been a foremost argument on the part of the proponents of socialized medicine. S. 1679, the administration bill, in its Declaration of Purpose proclaims that federal intervention is necessary for many reasons, of which the first is "the inability of the vast majority of our people to meet the shattering cost of serious or chronic illness."

A great many arguments might be presented to establish that medical care under federal control will be a great deal more costly. This may be illustrated by the experience of all nations where such programs have been employed. Even the estimates of the proponents of such a program in America indicate that costs will rise. It is felt here, however, that the unsupported statement concerning the expense of medical care under the present system might be refuted. The following paragraphs deal only with the subject, "Is medical care expensive?" The accompanying figures have been compiled by the Bureau of Medical Economic Research of the American Medical Association and have been taken from the United States Department of Commerce, the United States Chamber of Commerce, the Survey of Current Business, and other sources.

Consumer expenditures rose steadily from 111.4 billion dollars in 1944 to 164.8 billion dollars in 1947, representing an increase in consumer expenditures of 47.9 per cent. During those same years the cost of medical care was increased by only 33.9 per cent. Therefore, the rise in the cost of medical care did not keep pace with the rise in the general cost of living. This actually represents a reduction in the comparative cost of medical care because it accounts for a smaller percentage of the total budget of the average American family than it did four years before. In 1944 medical care accounted for 4.4 per cent of total consumer expenditures. In 1947 it was 4.0 per cent.

Certain other items, particularly hospital care, accounted for much of the increase in the cost of medical care. In 1949 the physician's share of the medical care dollar was 32 cents. In 1947 he received 25 cents of every dollar spent on medical care. The hospital portion rose from 13 to 21 cents, and other items remained virtually constant.

In the light of the "shattering cost" of medical care that has been spoken of in the administration bill, it might be valid to compare the national expenditures for medical care with certain items that could hardly be classified as living essentials. In 1947 the American people spent for jewelry 1½ billion dollars; for personal care (toilet articles, barber shop services, beauty parlors, etc.), 2.3 billion dollars; tobacco, 3.9 billion dollars; recreation, 9.4 billion dollars, and for alcoholic beverages, 9.6 billion dollars. In this same year the American public spent 1.7 billion dollars for physicians' services.

Or, adding the total spent for medical care to the totals spent for the above five items, the figure for 1944 is 23.5 billion dollars. In 1947 that amount had risen to 33.1 billion dollars. Excluding the cost of medical care, the American people spent 26.6 billion dollars for jewelry, personal care, tobacco, recreation and alcoholic beverages in 1947. This is four times the amount spent for medical care. In that same year the American people spent 1.7 billion dollars for physicians' services, or less than 1/15 of the amount spent for the other items.

Those advocating socialized medicine frequently state that more than 80 per cent of the population is unable to meet the cost of medical care. The above figures present several answers to that argument. In a free nation the American people will spend their money for whatever they wish. In 1947 they chose to spend more than twice as much for tobacco as for physicians' services. They elected to spend about four per cent of their income for all items of medical care. Therefore, the first point is that the people were not necessarily unable to meet the cost of medical care but that they chose to spend 96 per cent of their money for other commodities.

The second argument is a little involved. Statistics of this type do not tell the whole story in as much as some families spent practically nothing for medical care and others had large expenses. The hospitals and the medical profession have provided a plan whereby all persons may come into that four per cent class. By participating in a voluntary health program the large medical expenses may be budgeted at an annual cost within four per cent of the average income. Most Blue Cross and Blue Shield plans are offered on a family basis at an annual rate of about a package of cigarettes a day.

In Kansas there are several Blue Cross programs. The family plan for general membership on a five dollar hospital room costs \$2.80 a month. For an eight dollar room the monthly subscription rate is \$3.70. Add to that last figure the \$2.25 monthly rate for Blue Shield membership and the yearly cost is \$70.80. Therefore, in this state all members of a family may be covered for their major medical expenses and all hospital costs in an eight dollar

room for \$70.80. This is four per cent of the annual income of a family earning \$1,770. For a person employed at \$3,600 it represents less than two per cent. Of course the Blue Shield program does not include office visits and home calls, but even with those expenses added the average family would still stay within four per cent and the hazard of the "shattering cost" would be eliminated.

There are two other things that should be said about these figures. One is that many physicians were still dislocated in 1947, and somewhat more might have been spent for medical care had it been more readily available. On the other hand, the amount spent for medical care has remained virtually constant during depression periods as well as during the last few inflationary years. Therefore, this item appears like a necessity rather than as a luxury.

The second remaining point is that it is difficult to figure the amount of service that was purchased for each medical care dollar spent. On an item like cigarettes, for instance, the quantity consumed may easily be established because prices are constant. This is not true with reference to medical care expenses, and allowances must be made for cost variations not only with reference to locality but also for individual physicians and for the individual consumer. It is true, however, that the consumer receives much more in quality today for his medical care dollar than ever before. Many illnesses can be prevented, others greatly shortened, and the average life span has been so considerably increased that no question can remain in anyone's mind regarding the validity of that statement. A future article in this series will present statistics on the duration of illness and the average life expectancy.

In summary, then, the cost of medical care has risen slightly but not nearly in proportion to the rising cost of other commodities. The percentage spent for medical care out of the consumer's budget has actually reduced. Proponents of socialized medicine are wrong when they say that 80 per cent of the American people cannot afford medical care because it is shown that only four per cent of the consumer's dollar is spent on this item. Moreover, the consumer may safeguard his economy against the cost of catastrophic illness through voluntary insurance which will actually cost less than the average four per cent of his income.

Reorganization at Menninger Foundation

Administrative reorganization in the clinical service department of the Menninger Foundation, Topeka, and the appointment of new staff members was announced last month.

These changes unite services previously offered

in separate hospital and outpatient divisions and provide for definite assignment of specialists to the education programs, thereby providing more treatment opportunities for patients.

Dr. Lewis L. Robbins, a member of the staff since 1940 and director of the outpatient division since 1946, is now director of the newly organized Department of Adult Psychiatry, succeeding Dr. Robert L. Worthington who is now on the staff of the Northwest Clinic, Seattle, Washington. Dr. Robbins is an associate professor of psychiatry at the University of Kansas School of Medicine and is on the faculty of the Menninger Foundation School of Psychiatry.

Staff appointments include Dr. William Rottersman of Little Rock, Arkansas, Dr. Robert Foster former director of the Merrill-Palmer School, Detroit, Michigan, and Dr. Henry Lihn and Dr. Bernard H. Hall, alumni of the Menninger Foundation School of Psychiatry. Dr. Foster has been dividing his time between the University of Kansas and the Foundation during the past year.

Reno County Society Activities

Although most county societies do not hold meetings during the summer months, the Reno County Medical Society has maintained a full schedule of activities.

The first summer meeting was held at the county home of Dr. I. E. Hempstid, Hutchinson, on June 29. Dr. R. A. Stewart, who recently retired from practice after 60 years of service, was honor guest and was presented a gift. He responded by telling of his experience as a pioneer surgeon.

On July 7 the group met at the Wiley Tearoom, Hutchinson. Dr. Howard Brown, professor of bacteriology at Johns Hopkins University, Baltimore, Maryland, was guest speaker. He discussed recent advances in penicillin therapy and a new milk test for undulant fever.

A joint meeting with the staff of the St. Elizabeth Hospital in Hutchinson was held July 20 at the hospital nurses home. After a dinner meeting Dr. Robert Shears and Dr. John Jarrott presented papers on the diagnosis and treatment of anterior poliomyelitis, followed by general discussion.

Physicians of Reno County met with representatives of Blue Shield at the Leon Hotel, Hutchinson, July 24.

New members are being enrolled by Blue Shield at a rate of more than 10,000 per day, according to a recent report from Frank E. Smith, director of Associated Medical Care Plans. With a net gain of 966,294 members during the first quarter of 1949, Blue Shield enrollment had reached a total of 11,333,758 on March 31, 1949.

Case Reports From The University of Kansas Medical Center*

TUMOR CONFERENCE

Edited by R. E. Stowell, M.D., and E. B. Taft, M.D.

Dr. Stowell: Four cases of multiple myeloma with interesting histories, x-ray findings and bone marrow changes will be presented by our hematologist, Dr. Wilson.

Dr. Wilson: Although the diagnosis in all of the patients is the same, they all were difficult problems in that their symptom complex simulated some other disease and it was not until bone marrow was biopsied on each that the proper diagnosis was made.

Tumor Conference Case No. 49-38

M.O., a 62-year-old white woman, when first seen in March, 1946, had the chief complaints of arthritis of the spine, weakness and shortness of breath. She had been well until four months previously when she began to have lumbar backache. Her family physician found that there were arthritic changes in her spine and that she had a severe anemia. The anemia was refractory to both iron and liver therapy. She was given transfusions without improvement. On admission here her red blood cell count was 2,220,000 per cu. mm. with a low hemoglobin. Urine analysis revealed two plus albumin with hyaline and occasional granular casts but no Bence-Jones protein. Her non-protein nitrogen was 66 mgm. per cent. Because of her extreme anemia a bone marrow aspiration biopsy was done and malignant plasma cells were found. The patient was treated with urethane with improvement in her symptoms. She died four months later, eight months after the onset of her symptoms.

Dr. Tice: The roentgenograms show a moth-eaten type of destruction in the ribs and skull. We did not know at the time these films were first examined that plasma cells had been found in this patient's bone marrow so that we suggested that this might be metastatic malignancy or multiple myeloma. The characteristic lesions of multiple myeloma are said to be sharply outlined defects in the skull and granular type of bone destruction elsewhere, but not infrequently, as in this case, neither are present. Often one can only say the diagnosis lies between multiple myeloma and metastatic malignancy in such patients.

Tumor Conference Case No. 49-39

H.J.B., an elderly white man, had the chief complaint of weakness. An anemia was diagnosed and he was sent to the hematology clinic for evaluation. His erythrocyte count was 2,530,000 per cu. mm.

On smear there were many macrocytes and moderate anisocytosis and poikilocytosis of the other red blood cells. He had a slight leukopenia such as is not infrequently seen in pernicious anemia and there was hypersegmentation of individual polymorphonuclear leukocytes. Although this change in structure of the leukocytes is not characteristic of pernicious anemia alone, if looked for it does occur and is usually found in blood smears from such patients. The blood platelets were decreased to 127,000 per cu. mm. The patient had no free hydrochloric acid in his gastric juice. From the blood studies all one could say is that the patient had a macrocytic hyperchromic anemia. A urine analysis was negative. A bone marrow biopsy was done in an attempt to establish a diagnosis and the sternal marrow was found infiltrated, and in many areas replaced, with typical malignant plasma cells.

Dr. Tice: The most instructive roentgenogram from this patient is that of the skull in which typical punctate areas of destruction in the frontal and parietal areas may be seen. The sternum also shows similar lesions.

Tumor Conference Case No. 49-40

F.R., a 49-year-old colored man, was admitted to the hospital with the chief complaints of weakness and fever of three months' duration. He had had occasional nose bleeds for the previous six months particularly when he was doing heavy work. In the three months prior to admission he had headaches, a low grade fever, chills, night sweats, and frequent colds and sore throats. He also was troubled with shortness of breath. Physical examination revealed minimal enlargement of the posterior cervical lymph nodes on the left. The red blood cell count was 2,560,000 per cu. mm. with anisocytosis and many macrocytes. The color index and other findings were such that a diagnosis of macrocytic hyperchromic anemia was made. Except for hypersegmentation of the neutrophilic leukocytes, gastric achlorhydria and a decrease in platelets, the other laboratory findings were not remarkable. The patient did not respond to a trial of liver therapy. A bone marrow biopsy disclosed a plasma cell myeloma. The patient was placed on urethane therapy.

Dr. Tice: Roentgenologic examination of skull, spine, pelvis and sternum showed no pathologic change.

Tumor Conference Case No. 49-41

A.S., an elderly white woman, first noticed back pain upon exertion. While making the differential

*Cancer teaching activities aided by a grant from the National Cancer Institute.

count the technician observed many plasma cells. Examination of a bone marrow biopsy established the diagnosis of multiple myeloma. Her white blood count varied between 10,000 and 20,000 per cu. mm. with 35-40 per cent plasma cells. She also had an anemia and thrombocytopenia. Urine analysis was not remarkable. She was admitted to the hospital and placed on urethane therapy, but did not respond satisfactorily. During the four weeks she was in the hospital she developed pathological fractures of some of her ribs. She died one week after leaving the hospital.

Dr. Tice: This case is rather disappointing to a roentgenologist. She has compression of one of her vertebrae, but this looks more like a long-standing pressure defect than multiple myeloma. She does have pathological fractures of two ribs. The skull shows tiny questionable areas of translucence.

Dr. Wilson: Examination of smears of the bone marrow stained with Wright's stain is satisfactory for the diagnosis of multiple myeloma. One sees large atypical cells with basophilic cytoplasm and eccentric nuclei. There is frequently an unstained area adjacent to the nucleus. In supravital preparations this can be seen as a vacuole. The cells are obviously plasma cells, but they are much larger than those of chronic inflammation. They are truly malignant plasma cells. At times it seems that the duration of the disease can be directly correlated with the atypical appearance of the cells. The more malignant the cells, the shorter is the clinical course. In good preparations one sees clumps and clusters of such cells which certainly aids in the diagnosis. The plasma cells which one occasionally sees in the peripheral blood of these patients probably represents an overflow phenomenon rather than a true plasma cell leukemia.

Dr. Stowell: Dr. Tice, would you care to comment further about the radiological findings in multiple myeloma?

Dr. Tice: Of course without a microscope, all one can do is look at roentgenograms of a bone and try to evaluate such defects as may be present. Syphilis will produce defects that are similar to metastatic lesions or multiple myeloma. The association of a soft tissue tumor with the defect facilitates the diagnosis. However, to say one roentgenological finding is typical of multiple myeloma is not very safe. Some of the best "drill-hole defects" that I have seen diagnosed as multiple myeloma have proved to be metastatic tumors. Hand-Christian-Schüller disease or eosinophilic granuloma also may produce skull defects.

One also has to be wary of artifacts. For instance a skull may have more prominent vascular channels than others. Such lesions have been diagnosed as

tumor only to find that they were merely enlarged diploic veins. In multiple myeloma, as in many other diseases, one really has to know all of the clinical and laboratory findings to make a satisfactory roentgenological diagnosis.

Previously patients with multiple myeloma were referred to the radiology departments for therapy since these tumors were considered relatively radio-sensitive by some people. I have not seen many such patients and I have not had outstanding success in relieving pain or producing bone regeneration. Recently Garland and Kennedy¹ stated that multiple myeloma is not a radio-sensitive tumor. This was a surprise to me even though it agreed with my own experience, so I am anxious to know what, if anything, can be done to prolong life and to relieve the pain of these patients.

Dr. Wilson: It seems to me that we are entering a new phase of tumor chemotherapy in which we shall have more than one therapeutic agent to use in cases of multiple myeloma. But before I discuss therapy, I want to discuss diagnosis of the disease, which is not always easy. We tend to think of multiple myeloma in terms of a textbook picture with Bence-Jones proteinuria, typical bone lesions and an elevated serum globulin. There is but one sure way of establishing the diagnosis in suspected cases. That is bone marrow biopsy. For this the patient must be prepared with a sixth to a quarter of a grain of morphine. One may have to try multiple sites in order to obtain an adequate sample of marrow. I use four sites in the sternum and if necessary the crest of the ilium. Some use spinous processes of vertebrae as well, but I have avoided that site of biopsy because of the possibility of giving a patient a cause for backache which may never be relieved. It is helpful to use a supravital technic in this procedure, for while one is examining the supravital preparations, the technicians can be making and staining permanent slides and preparing for the next puncture. Such a method enables one to find out whether one has made a satisfactory aspiration biopsy or whether it is necessary to make another attempt.

After the diagnosis is established, treatment must be considered. Treatment is a difficult problem in multiple myeloma. Recently Dr. von Hamm, a pathologist, presented his findings in a case which had been treated with nitrogen mustard. He stated that the patient had died as a result of treatment with nitrogen mustard and that the only healthy cells in the body appeared to be the neoplastic plasma cells. Stilbamadine was tried in the treatment of multiple myeloma, but further experience has not substantiated the efficacy of this drug. Urethane is the most recently proposed therapeutic agent for multiple myeloma. A recent report² described four cases in

which rather good results have been obtained for a period of months. By now I have treated the third case discussed here for several months with urethane. He seems to be doing quite well in contrast to the first and last cases. He still has an anemia but is back at work and no longer has fever, night sweats or malaise.

In this disease, as in other malignancies, any therapeutic agent can be judged only on the basis of long term results. In multiple myeloma there is an additional complicating factor when one wants to judge statistics. There are degrees of malignancy here as in any other tumor. Those that die after a fulminating disease process usually have large anaplastic cells. In some it is most difficult to be sure that one is actually dealing with plasma cells. In contrast in those patients who have a chronic protracted illness of eight years or more, the plasma cells tend to be small, regular and more nearly resemble those seen in chronic inflammatory processes. One must consider such things when judging the efficacy of a therapeutic agent.

Dr. Stowell: Many pathologists regard solitary myelomas as single medullary lesions, multiple myelomas as multiple osseous foci, and extramedullary plasmacytomas as non-osseous tumors which are closely related manifestations of neoplastic plasma cells.

Dr. Wilson: One does see solitary myelomas, but I always wonder if one has not missed the other lesions in such patients.

Dr. Orr: Could you tell us the earliest signs or symptoms that might lead one to suspect this disease?

Dr. Wilson: That is rather difficult as is shown by the cases discussed. Many complain first of weakness. Others have a syndrome consistent with pernicious anemia. A pathologic fracture is the presenting complaint in some. Many have chills and fever similar to those seen in tuberculosis and Hodgkin's disease so that the presenting symptoms and signs may be as varied as the physical, laboratory and roentgenologic changes observed when the patient is first examined.

Student: What is the frequency of bone lesions in these patients?

Dr. Wilson: Roughly 12 per cent of patients have no positive roentgenologic findings.³

Student: Is the absence of free hydrochloric acid important?

Dr. Wilson: The only reason it was mentioned in these patients was because two were mistakenly diagnosed and treated for pernicious anemia.

Dr. Tice: What is the age range for this disease?

Dr. Wilson: Multiple myeloma is most frequent

between 30 and 70. Few cases have been reported in patients under 30 years of age.

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Research on Eclampsia

A first step toward discovery of the cause of eclampsia, a disease that accounts for about one-fifth of all maternal deaths in this country, may be a by-product of cancer research at the National Cancer Institute, it was announced recently by the Public Health Service, Federal Security Agency.

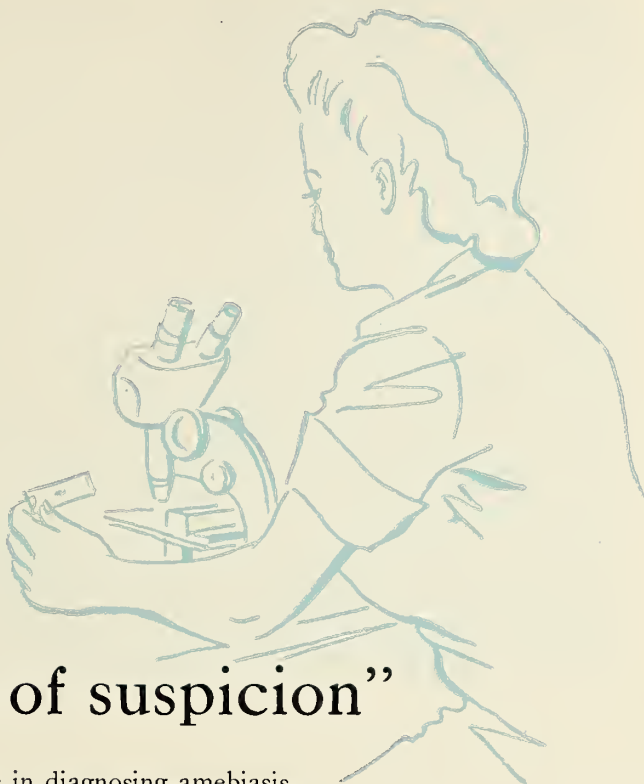
Investigating the role of progesterone in breast cancer, Dr. Alexander Symeonidis, a Cancer Institute pathologist, found that injections of the hormone into rats in late pregnancy caused death, serious illness, or abortion in circumstances strikingly similar to those of human eclampsia. Whether tumors will also develop, as is expected, is still being investigated.

Although the cause of eclampsia is still to be identified, Dr. Symeonidis's work apparently demonstrates that the problem is related to hormonal or endocrine imbalance. This probability has at last made possible a rational approach to eclampsia-like disease investigation since it can be readily produced in a laboratory animal.

In experiments with pregnant mice, Dr. Symeonidis had previously found that progesterone injections, in addition to increasing breast cancer incidence, often had a fatal effect not due to cancer. The new series of experiments, in rats, was undertaken partly to study the circumstances of this lethal action.

Virgin rats and rats in early pregnancy were not affected by the injections. Like human mothers, only rats in late pregnancy developed the eclampsia-like disease. Their symptoms were largely typical of those in human toxemia of pregnancy, high blood pressure, impaired kidney function, an abnormal accumulation of fluids in body cavities, and so on. The characteristic tissue-cell changes that occur in the liver, kidneys and placenta during human eclampsia were observed in the respective animal organs. So strikingly similar were the lesions in the microscopic sections of human eclampsia tissue and in those of the rats that pathologists were hardly able to tell them apart.

One of the ironies is that Dr. Symeonidis, in a series of experiments conducted in Germany in 1936, was unsuccessful in a direct attempt to produce animal eclampsia. He achieved his original goal, more or less accidentally, 13 years later when engaged primarily in studying cancer causation.



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Blue Shield and Medical Economics

Blue Shield has now created credit against unpredictable medical bills for more than 150,000 Kansans. The fact that Blue Shield is increasing the ability of a growing number of patients of modest income to purchase medical services will be more appreciated by patients and doctors alike as our economy levels off.

This achievement has not been easy. In the future it may be even more difficult to persuade the average citizen to prepay his major sickness expense. As times get more stringent it is likely that one of the first items to be stricken from the family budget will be insurance against medical and hospital bills. This assumption is based on the public's attitude toward the availability of medical and hospital care regardless of who pays the bill. The tendency on the part of the public to place sickness insurance in a minor budgetary position is indicated by the fact that during the past year Blue Shield had to enroll 90,000 people in order to make a net gain of 60,000.

The outlook is further influenced by the need, within the very near future, to raise Blue Shield dues in the face of a decline in the general economy. Present dues will no longer sustain the rate at which members are using the services. It is apparent that people who have established a credit for medical service make wider use of that service than those who pay out of pocket. This is so in all Blue Shield and Blue Cross Plans. In Kansas during 1949 it is estimated that 170 out of each 1,000 members will have benefited by Blue Shield services.

The question is, how much are people *willing* to prepay for medical care? The trustees and staff of Blue Shield cannot be sure. This question was discussed on July 24 at a meeting of the Physician Relations Committee, which is made up of one representative of each councilor district. On August 25 the Executive Committee of Blue Shield is meeting with representatives of the membership to talk over this matter. It is important that Blue Shield not price itself out of the low income market. If the revised Blue Shield program should include more services than the majority of people is willing to prepay, then an imbalance between healthy and unhealthy members is likely to occur. Sick people never pay their way. They stay with us always, irrespective of the amount of the dues. The members of average health are the ones we have to be thinking about because if they drop out the plan will not work. It is essential, therefore, that the scope of Blue Shield services not be broadened faster than we are able to develop public understanding of the value of additional services. To this end the support

of every doctor is required in his contacts with patients and the public.

It is possible that unless the spending habits of the people are modified, with less emphasis on luxury items, the future of private medical practice may be forfeited to an all-providing government. Through Blue Shield we have a flexible instrument for creating self-providence with respect to the increasing cost of medical care.

Research Grants Total \$159,644

The Sterling-Winthrop Research Institute, together with Winthrop-Stearns, Inc., awarded a total of 52 grants-in-aid during 1948, according to a joint report issued recently, with a total expenditure of \$159,644. Twenty-four of the grants went to universities, medical schools and colleges, and the balance to clinics, hospitals, research foundations and individuals.

General grants were made for the purpose of supporting investigations and training in therapeutics, pharmacology, neuro-surgery, internal medicine, organic chemistry and related fields. Specific grants supported research in antiseptics, spinal and topical anesthesia, general anesthesia, detergents, amino acid preparations, analgesics, chemotherapy, x-ray contrast media, metabolism, enzymes, infectious diseases, and treatment of heart conditions and wounds.

Dentist Studies Lip Cancer

Results of an intensive study of lip cancer in 835 cases were reported last month by Lieutenant Colonel Joseph L. Bernier, chief of the Dental and Oral Pathology Section, Armed Forces Institute of Pathology, in a paper read before the Dental Faculty of the Royal College of Surgeons in London.

Among his findings were the following: incidence of lip cancer is highest in persons having blue or grey eyes, blonde or brown hair and fair or ruddy complexion; absence of protective pigment and thinness of skin may be influencing factors in persons subjected to prolonged sunlight since there is an extremely low percentage of incidence in Negroes, who have abundant pigmentation and thickness of skin; "sunburn" wavelengths of solar radiation (3200 angstrom units or less) are a factor in developing lip cancer in persons who lack sufficient protective pigmentation or whose outer skin covering is thin; approximately 83 per cent of the surgical and biopsy specimens showed changes in the skin and/or mucous membrane of the lip, which are usually associated with age changes in normal skin and mucous membrane.

Of 375 patients who were followed after treatment, 343 were living and free from cancer at the end of three years, making a three-year cure rate of 91.5 per cent. The cure rate for five years was 82.1.



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ACTIVITIES OF MEMBERS

Dr. J. D. Burger, who recently completed an Army tour of duty of two years, has begun practice in Nickerson, taking over the office of Dr. H. L. Graber who is now with the Gage-Hall Clinic in Hutchinson.

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Dr. Charles J. Balogh, who has been in Australia on a tour of duty with the U. S. Army, expects to return to Wichita this fall.

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Dr. R. Hale, a graduate of the University of Kansas School of Medicine in 1946, has opened an office in Eudora. He was recently released from the Army after two years' service.

* * *

Dr. Herbert Randles and Dr. Leland P. Randles, Fort Scott, announce that Dr. Vernon Berkey is now associated with them in practice. After his graduation from the University of Kansas School of Medicine, Dr. Berkey spent several years in the Army and then had a fellowship in internal medicine at St. Louis University.

* * *

Dr. H. O. Anderson, Wichita, recently became a diplomate of the American Board of Orthopedic Surgery.

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Dr. R. H. Hill, who has been practicing in Liberal during the past year, has moved to Meade, his former home, and has reopened his office there.

* * *

Dr. Ray Meidinger, Hiawatha, was recently named coroner of Brown County by Governor Frank Carlson to fill the vacancy in the office caused by the death of Dr. Paul E. Conrad. Dr. R. T. Nichols, Hiawatha, was named health officer for Brown County, a position also formerly held by Dr. Conrad.

* * *

Dr. J. E. Hodgson, Downs, was guest of honor at a community dinner at the Downs Memorial hall on May 30, a celebration recognizing his 50th anniversary in the practice of medicine.

* * *

Dr. J. M. Mott, Lawrence, was recently promoted from lieutenant colonel to colonel in the medical department of the staff of the Kansas National Guard. His first commission in the Guard was in 1924 when he became a lieutenant.

* * *

Dr. E. V. Thiehoff, chairman of the Department of Public Health and Preventive Medicine at the University of Kansas, has been certified to the founders group of the newly created American

Board of Preventive Medicine and Public Health.

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Dr. T. C. Ensey, who has been practicing in Wichita, has moved to Marion and is now established in practice there.

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Dr. H. L. Chambers, Lawrence, who observed his 80th birthday anniversary June 13, was guest of honor at a surprise party at the Hotel Eldridge that evening with more than 100 friends present to celebrate the occasion. He has spent 54 years in the practice of medicine, first at Edgerton, then at Lecompton and later at Lawrence.

* * *

Dr. C. F. Taylor, superintendent of the state sanatorium at Norton, was awarded a gold key by the American Academy of Tuberculosis Physicians at a meeting held in Atlantic City early in June. Dr. Taylor, the first to receive the award, was recognized for "service beyond the call of duty."

* * *

Dr. Carter B. Sigel, who has been practicing in Emporia for the past year, has moved to Cottonwood Falls and is practicing there in association with Dr. A. E. Titus.

* * *

Formation of the Olathe Clinic was announced recently by Dr. C. W. Jones, who will serve as its head. Associated with him will be Dr. George J. Pierron, who has been practicing with Dr. Jones since October 1948, and Dr. Donald R. Davis, who was recently released from the Navy. Dr. Davis is a graduate of Temple University School of Medicine, Philadelphia, and spent one year in the department of surgery at the National Navy Medical Center, Bethesda, Maryland.

* * *

Dr. A. L. Ashmore, Wichita, addressed the Kiwanis Club of that city on June 1, pointing out the disadvantages of compulsory health insurance schemes. At the next meeting of the club Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, told of an alternative plan, expansion of medical facilities, and outlined progress of that plan in Kansas.

* * *

Dr. Kenneth Lohmeyer, who recently finished a residency at St. Francis Hospital, Wichita, has opened an office in Emporia.

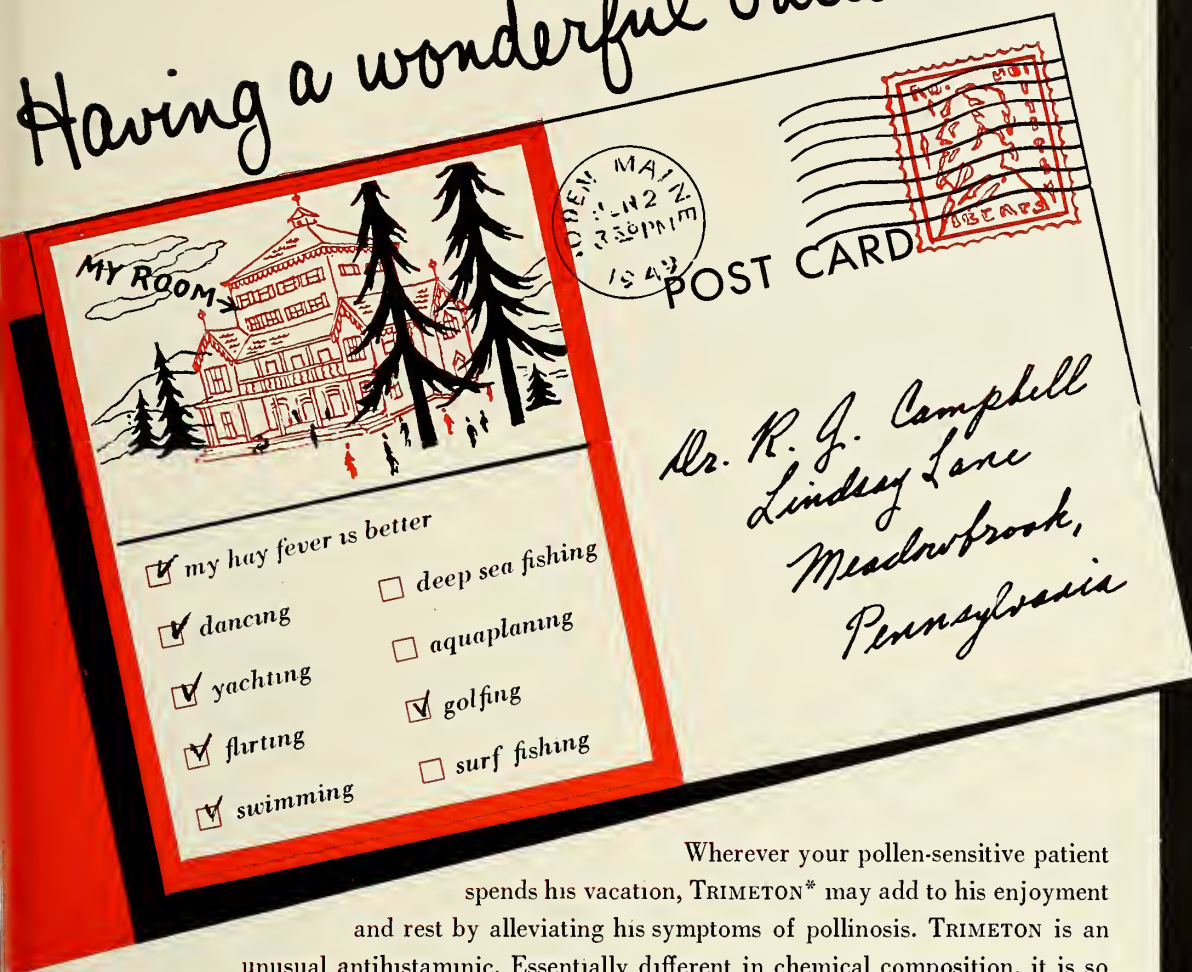
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Dr. O. C. Fritts, Osage City, recently observed the 50th anniversary of his entry into the practice of medicine. He first practiced in Belle, Missouri, and opened his office in Osage City in 1922.

* * *

Dr. R. Y. Strohm, Fort Scott, has become a mem-

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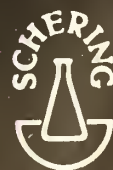
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ber of the board of health of that city, an organization formed to establish principles of preventive medicine there.

* * *

Dr. L. B. Mellott, Bonner Springs, was recently named a deputy coroner by the commissioners of Wyandotte County.

* * *

Dr. W. M. Tate, Peabody, announces that Dr. Jack M. Gilliland is now associated with him in practice. Dr. Gilliland was graduated from the University of Kansas School of Medicine in 1945, served 18 months in the Philippines during World War II, and recently was on the staff of the Veterans' Hospital in Wichita.

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Dr. Don Miller, who recently finished a residency at St. Francis Hospital, Wichita, has opened an office for private practice in Manhattan.

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Dr. H. Morrison, Smith Center, began his 50th year of practice July 10.

* * *

Dr. Joe M. Shearer, Caldwell, has enrolled for a course of four months duration at the Chicago Maternity Center.

* * *

Dr. J. B. Ungles, Satanta, recently retired from practice and announced that Dr. Elbert McNeil will take over his office. Dr. McNeil was graduated from the Colorado Medical School in 1948 and has just completed an internship at San Diego County General Hospital.

* * *

Dr. Milton Dodge, who practices in De Soto and Sunflower, has joined the medical organization at the Sunflower Ordnance Works and will spend some time each day at the plant.

* * *

Dr. Haddon Peck, president of the Kansas Medical Society, was principal speaker at the dedication of the new Greeley County Hospital at Tribune July 3.

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Dr. Ray Meidinger, Hiawatha, was recently named surgeon for the Union Pacific Railroad, filling the post formerly occupied by the late Dr. Paul E. Conrad.

* * *

Dr. R. E. Cheney, Salina, announces that Dr. Max Lake is now associated with him in practice. Dr. Lake recently completed a two-year residency in ophthalmology in Omaha.

* * *

Dr. A. T. Steegmann, professor of psychiatry and

neurology at the University of Kansas School of Medicine, was recently elected to active membership in the American Neurological Association. He was also reappointed a member of the Program Committee of the American Academy of Neurology and a member of the regional committee for the states of Missouri and Kansas of the Membership Committee of the Academy.

* * *

Dr. Conrad C. Clement, who has practiced in Olathe during the past two years, moved to his former home at Wellsley, Massachusetts, last month to engage in private practice there.

* * *

Dr. H. H. Haerle, Marysville, announces that his son, Dr. H. Shields Haerle, is now associated with him in practice. The younger Dr. Haerle recently completed his internship at Kansas City General Hospital. He was graduated from the University of Nebraska School of Medicine and served in the Army during the war.

* * *

Dr. C. W. Jones, Olathe, was presented a 50-year emblem by the Grand Lodge of Kansas, A.F. and A.M., at ceremonies at his home last month in recognition of faithfulness to the Masonic craft.

* * *

Dr. Murray C. Eddy, Hays, was named to the Kansas State Board of Medical Registration and Examination last month by Governor Frank Carlson. He replaces Dr. C. W. Jones, Olathe, who resigned. Dr. J. D. Colt, Jr., Manhattan, was reappointed to the board for a four-year term ending in 1953.

Board Examinations in February

The next scheduled examination (Part I) for candidates for the American Board of Obstetrics and Gynecology, Inc., will be held in various cities of the United States and Canada on February 3, 1950. Applications and bulletins, including details of changes in regulations, may be obtained from the Board, 1015 Highland Building, Pittsburgh 6, Pennsylvania. At the 1949 meeting of the Board 236 candidates were certified.

C. of C. Opposes Socialized Medicine

The Topeka Chamber of Commerce, at a meeting held June 22, went on record as opposing socialized medicine. The State and National Affairs Committee of that body deplored concentration of power in the federal government and appropriated money for publication of a brochure to combat plans for compulsory health insurance and federal aid to education and to approve plans for government reorganization to eliminate duplication and waste.

FROM SECRETARY OF DEFENSE LOUIS JOHNSON—

AN URGENT APPEAL TO YOUNG DOCTORS!



Your personal help is needed to avert a serious threat to our national security!

By the end of July of this year we will have lost almost one-third of the physicians and dentists now serving with our Armed Forces. Without an increased inflow of such personnel, the shortage will assume even more dangerous proportions by December of this year.

These losses are due to normal expiration of terms of service. The professional men who are leaving the Armed Forces during this critical period are doing so because they have fulfilled their duty-obligations and have earned the right to return to civilian practice.

Without sufficient replacements for these losses, we cannot continue to provide adequate medical and dental care for the almost 1,700,000 service men and women who are the backbone of our nation's defense.

Normal procurement channels will not provide sufficient replacements!

To alleviate this critical, impending shortage of professional manpower in the three services, I am urging all physicians and dentists who were trained under wartime A. S. T. P. and V-12 programs under government auspices or who were deferred in order to complete their training at personal expense, and who saw no active service, to volunteer for a two-year tour of active duty, at once!

We have written personally to more than 10,000 of you in the past weeks urging such action. The response to this appeal has not been encouraging, and our Armed Forces move rapidly toward a professional manpower crisis!

Many responses have been negative, but worse—a great number of doctors have not replied. It is urgent that we hear from you immediately!

We feel certain that you recognize an obligation to your fellow men as well as to your profession in this matter. We are confident that you will fulfill that obligation in the spirit of public service that is a tradition with the physician and dentist.

There is much to be said for a tour of duty with any of the Armed Forces. You will work and train with leading men of your professions. You will have access to abundant clinical material; have the best medical and dental facilities in which to practice. You will expand your whole concept of life through travel and practice in foreign lands. In many ways, a tour of service will be invaluable to you in later professional life!

Volunteer now for active duty. You are urged to contact the Office of Secretary of Defense by collect wire immediately, signifying your acceptance and date of availability. Your services are badly needed. Will you offer them?

Louis Johnson

Changes at School of Medicine

A number of changes in the faculty at the University of Kansas School of Medicine were announced recently by Dr. Franklin D. Murphy, dean. Those not previously reported in the Journal are as follows.

Dr. Robert Guthrie is now professor of bacteriology and head of that department, succeeding Dr. Noble P. Sherwood who has retired but will continue to teach. Miss E. Jean M. Hill is director of nursing at the Medical Center, succeeding Miss Avis Van Lew who resigned to enter the United States Public Health Service.

New members of the faculty, since July 1, 1948, are: Dr. Roy F. Garrison, instructor in pediatrics; Dr. Henry Tihen, lecturer in medicine; Dr. Andrew Mitchell, instructor in surgery (urology); Dr. Clarence W. Erickson, lecturer in medicine; Dr. Earl L. Mills, lecturer in medicine; Dr. John M. Porter, lecturer in medicine; Dr. Philip W. Morgan, lecturer in medicine; Dr. Martin J. Mueller, instructor in medicine; Dr. Geoffrey M. Martin, lecturer in pediatrics and public health and preventive medicine; Dr. Morris Statland, assistant in medicine; Dr. Richard E. Johnson, assistant professor of pathology and oncology; Dr. William T. Sirridge, assistant in medicine; Dr. Edward E. Anderson, assistant in ophthalmology; Dr. W. H. Rayn, assistant in ophthalmology; Dr. Blaine Z. Hibbard, assistant in medicine; Dr. Frederick S. Morest, associate in medicine; Dr. Michael Donovan, instructor in surgery (orthopedics); Mr. Harry W. Poston, lecturer in public health and preventive medicine.

Three resignations were received: Dr. J. Paul Frick, from the department of dermatology; Dr. Eugene D. Liddy, from the department of medicine; Dr. E. L. Gann, from the department of otorhinolaryngology. Two members of the faculty died during the period, Dr. J. S. Betz, instructor in ophthalmology, and Dr. E. W. Wilhelmy, assistant professor of medicine.

The following promotions were announced: Dr. R. L. Sutton, Jr., to professor of dermatology; Dr. Buford Hamilton, to clinical professor of obstetrics and gynecology; Dr. Hubert M. Floersch, to assistant professor of obstetrics and gynecology; Dr. Robert L. Newman, to assistant professor of obstetrics and gynecology; Dr. James H. Wheeler, to assistant professor of medicine; Dr. Harold M. Roberts, to associate in medicine; Dr. Ira Morrison, to associate in medicine; Dr. Arnold Arms, to instructor in medicine; Dr. Ira Layton, to instructor in medicine; Dr. William T. Sirridge, to instructor in medicine; Dr. R. E. Bolinger, to associate in medicine; Dr. Marvin L. Bills, to assistant professor

of psychiatry and neurology; Dr. G. L. Harrington, to assistant professor of psychiatry and neurology; Dr. G. W. Robinson, Jr., to assistant professor of psychiatry and neurology; Dr. Sylvia Allen, to associate in psychiatry and neurology; Dr. E. H. Trowbridge, Jr., to associate in psychiatry and neurology; Dr. John Knight, to associate in otorhinolaryngology; Dr. James Boley, to assistant professor of pathology; Dr. H. A. Wenner, to associate professor of pediatrics; Dr. Damon Walthall, to assistant professor of pediatrics; Dr. Donald L. Rose, to associate professor of physical medicine; Dr. C. E. Virden, to assistant professor of radiology; Dr. Paul W. Schafer, to professor of surgery; Dr. P. H. Lorhan, to clinical professor of surgery (anesthesia); Dr. Gretchen Guernsey, to assistant professor of surgery (anesthesia); Dr. T. B. Hall, to assistant professor of dermatology.

Tri-County Medical Meeting

A number of Kansas physicians attended a meeting of the Tri-County Medical Society in Ponca City, Oklahoma, June 10. Dr. Fred M. Tetzlaff, of the Menninger Clinic, Topeka, spoke on "Psychiatry in General Practice," and Dr. F. Reeding Hood, Oklahoma City, discussed "Geriatrics with Special Reference to the Heart."

ANNOUNCEMENTS

- August 1-13—Intensive Personal Course in Cerebral Palsy, Cook County Graduate School of Medicine. M. A. Perlstein, M.D., Instructor. Address Registrar, 427 South Honore Street, Chicago 12, Illinois.
- September 6-10—27th Annual Session, American Congress of Physical Medicine, Netherland Plaza Hotel, Cincinnati, Ohio. Address American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.
- September 26-28—Annual Meeting Southwestern Surgical Congress, Shamrock Hotel, Houston, Texas. All physicians invited.
- September 28—Sixth Annual Meeting, American Medical Writers' Association, Jefferson Hotel, St. Louis, Missouri.
- September 28-30—14th Annual Meeting, Mississippi Valley Medical Society, Jefferson Hotel, St. Louis, Missouri. No registration fee. Address Harold Swanberg, M.D., secretary, M.V.M.S., 209-224 W.C.U. Building, Quincy, Illinois.
- October 17-23—Clinical Congress, American College of Surgeons, Chicago. Including Sixth Inter-American Congress of Surgery. Headquarters at Stevens Hotel. Address Department of Public Relations, 40 East Erie Street, Chicago 11, Illinois.
- October 24-29—Course in Preclinical Science in Internal Medicine, American College of Physicians, at Washington University School of Medicine and St. Louis University School of Medicine, St. Louis, Missouri. Address E. R. Loveland, Executive Secretary, 4200 Pine Street, Philadelphia 4, Pennsylvania.
- October 27-29—Course in Gastrointestinal Surgery, Boston City Hospital, Boston, Massachusetts. Address National Gastroenterological Association, Department GSJ, 1819 Broadway, New York City.
- November 7-12—14th Annual Assembly and Convocation, International College of Surgeons, United States Chapter, Atlantic City, New Jersey. Open to all doctors of medicine interested in surgery. Address inquiries to Arnold S. Jackson, M.D., Secretary, Jackson Clinic, Madison 4, Wisconsin.
- November 9—Third Annual Southwest Regional Cancer Conference, Blackstone Hotel, Fort Worth, Texas. Hosts, Tarrant County Medical Society and Tarrant County Unit, American Cancer Society. No registration fee. Address Tarrant County Medical Society, 209 Medical Arts Building, Fort Worth 2, Texas.



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New Doctors of Medicine

Proof that the Kansas Plan is attracting widespread interest is found in the large number of physicians who are coming to this state from other parts of the nation. A large majority of those who took the examinations given in June by the Kansas State Board of Medical Registration and Examination reported to Dr. J. F. Hassig, secretary of the board, that they planned to locate in this state.

Following is a list of 35 who were licensed by reciprocity. After each physician's name is the state from which he first received a license and the name of the Kansas city in which he is now practicing or will soon practice.

John Richard Adams, Illinois, Topeka; James Bethune Campbell, Illinois, Topeka; Abraham Meyer Churner, Illinois, Hays; Faith Margaret Cooper, Ohio, Topeka; Charles A. Crockett, Arkansas, Kansas City; Donald R. Davis, Wisconsin, Olathe; Robert W. Forsythe, Louisiana, Kansas City; Henry M. Foster, Kentucky, Hays; Robert F. Freeman, National Board, Topeka; Randall B. Haas, Ohio, Hardtner; Henry S. Haerle, Nebraska, Marysville; George S. Hopkins, Louisiana, Topeka; George Rae Jewett, Indiana, Topeka; Hilbert P. Jubelt, Illinois, Manhattan; Charles F. Kittle, Illinois, Kansas City.

Roy Canedy Knowles, National Board, Topeka; Walter Mau, Wisconsin, Leavenworth; Campbell C. McCullough, Jr., California, Kansas City; Roscoe F. Morton, Arkansas, Arkansas City; Mabel Mousset, National Board, Topeka; Walter Lee Owens, Indiana, Manhattan; James H. Pennington, Georgia, Dodge City; Charles W. Rayburn, Mississippi, Topeka; George Sherman Ripley, Connecticut, Salina; Katherine P. Rivera, National Board, Kansas City; Daniel S. Roccaforte, Nebraska, Hanover; W. H. Ryan, California, Overland Park; John A. Segerson, National Board, Topeka; John G. Shellito, National Board, Wichita; James Edwin Simmons, Ohio, Topeka; William K. Smith, Tennessee, Sedan; W. B. Spreigel, National Board, Topeka; Eldden John Teeter, Michigan, Goodland; John W. Warren, Jr., Michigan, Wichita; Earl W. Wilkins, Jr., National Board, Winfield.

Other non-residents, graduates of schools other than the University of Kansas School of Medicine, who took the Kansas examination and were awarded licenses are: Bruce Carl Jeppson, University of Oregon; Melvin L. Masterson, University of Utah; John H. Mehnert, University of Wisconsin; George J. Miller, Creighton University, Louis S. Morgan, University of Oklahoma; Thomas A. Munson, University of Illinois; Robert F. McNeill, University of Nebraska; James G. O'Shea, Jr., University of Oklahoma; Samuel M. Ramer, Long Island College of Medicine. Six of the nine have already selected

Kansas locations in which they wish to practice.

Eighty-two 1949 graduates of the University of Kansas School of Medicine successfully completed the examination. Although all will serve internships before going into practice, only 26 of that number are undecided about their plans for practice. Forty-nine now have Kansas locations in mind and seven non-Kansans plan to go to other states. The doctors from the University of Kansas and their residences are as follows: Larry Alton Arnspiger, Wellington; Lafe William Bauer, Broughton; Rex Charles Belisle, Miltonvale; Robert Wayne Blackburn, Lawrence; Mary Josephine Blood, Wichita; Marian Jean Boehmer, Kansas City; George Franklin Boone, Manhattan; Robert William Borders, Mer Rouge, Louisiana; Frank C. Brosius, Jr., Wichita; Robert L. Brown, Wichita; Donald Robert Buechel, Wichita; Benedict S. Budai, Detroit, Michigan; John C. Campbell, Kansas City, Missouri; Laurel Glenn Case, Bremerton, Washington.

Herman De Wayne Cofer, Lawrence; George Henry Cook, Jr., Concordia; Robert Lee Corder, Denison; Earl D. Coriell, Denton; Ira Cox, Jr., Wichita; James Edwin Crockett, North Kansas City, Missouri; James Maurice Cuthbertson, Sterling; Seldon C. Dunn, Kansas City, Missouri; Galen W. Fields, Kansas City; Henry Louis Foucher, Hanover; Frank Russell Frink, Kansas City; Edward Goldsich, Kansas City; Orval Lee Hamm, Kansas City; Dennis A. Hardman, Blue Rapids; Rosemary Boles Harvey, Manhattan; William Dwight Hawley, Jr., Wichita; Janet L. Holloway, Wichita; Sylvester Paul Hornung, Spearville; Robert Dean Hughes, Kansas City; Charles A. Isaac, Newton; Neal M. Jenkins, Kansas City; Ethlyn C. Jennings, Parkville, Missouri; George Hupp Keene, Jr., Pratt.

C. K. Kennard, Kansas City; Carl Davis Kobler, Morland; Lawrence Edward Lamb, Kansas City; Anita Mae Landrum, Hays; Roy Anthony Lawson, Jr., Kansas City; Bruce L. Livingstone, Seattle, Washington; Richard F. Looker, Emporia; John R. Marshall, Floral Park, New York; Glen E. Martin, Jr., Wichita; Max I. Miller, Kansas City; Warren Calvin Miller, Conroy, Pennsylvania; Tom Allen Montgomery, Mission; M. E. Musgrave, Minneapolis; William Robert McPhee, Topeka; Bentley A. Nelson, Kansas City, Missouri; Phyllis Ann Ogg, Kansas City; Milton Bernard Ozar, Kansas City, Missouri.

Don Clifford Peterson, Palo Alto, California; Richard J. Reece, Kansas City; Francis E. Riordan, Kansas City, Missouri; Alvin Leon Russo, Buffalo, New York; Robert King Saylor, Kansas City, Missouri; Jack Clare Schroll, Hutchinson; Harold Shifrin, Bronx, New York; Robert Keith Skillman, Hutchinson; Charles Ewell Shopfner, Fort Smith,



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Arkansas; Donald John Smith, Kansas City, Missouri; William S. Spicer, Jr., Kansas City; Louis Joseph Stadnik, Marysville; Rex Taggart, Kansas City; Daniel J. Tenenberg, Minneapolis, Minnesota; Elias M. Thorne, Newton; Howard Roy Wagenblast, Smith Center.

Richard Douglas Waterman, North Haven, Maine; Robert Wilson Weber, Kansas City; William T. West, Wichita; Cad Benson Westfall, Halstead; George N. Weston, Jr., Salt Lake City, Utah; S. Bruce Whittenberger, Mission; John Jerome Wildgen, Wichita; Alice Hornbuckle Wilson, Kansas City; Alexander James Wray, Wichita; Byron A. Yost, Sabetha; Emerson David Yoder, Kansas City, Missouri; Samuel Zweifel, Jr., Luray.

Golden Belt Meeting

Dr. E. L. Vermillion, Salina was host to the Golden Belt Medical Society at a meeting held at the K. L. Druet farm near Salina July 7. Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, was guest speaker.

Grants for Research in Heart Disease

National Heart Institute grants of more than \$1,200,000 to support heart disease research work in medical schools and hospitals in 21 states, the District of Columbia and Canada were announced in July by the Federal Security Agency. Of this amount \$8,310 was awarded to the University of Kansas School of Medicine. Additional grants for new heart research and for construction of heart research facilities and laboratories are expected to be announced shortly.

Established a year ago under authority of the National Heart Act, the National Heart Institute is one of the National Institutes of Health, the research arm of the Public Health Service, with headquarters in Bethesda, Maryland. In addition to conducting scientific research in its own laboratories, the Institute administers federal funds supporting research and training related to the cause, prevention, and methods of diagnosis and treatment of heart disease in outside institutions throughout the country.

Presently under study and supported by the grants announced are projects investigating the role of heredity in coronary heart disease, the effect of diet on high blood pressure and arteriosclerosis, and the usefulness of new drugs in helping to relieve heart disease symptoms. Evaluations and studies are also being made of instruments such as the ballistocardiograph and the electrokymograph, to improve their usefulness as diagnostic tools in heart disease.

The grants to the Kansas school were as follows: \$5,160 to Dr. Sloan J. Wilson for "clinical and basic

fundamental research on the variations of the various blood coagulation factors in health and disease, with particular emphasis on hematologic diseases;" \$3,150 to Dr. Parke H. Woodard for "a study of the mechanism of anaphylactic shock."

DEATH NOTICES

IRA BRADFORD CHADWICK, M.D.

Dr. I. B. Chadwick, Coffeyville, an active member of the Montgomery County Medical Society, died June 16. He specialized in eye, ear, nose and throat work and was a diplomate of the American Board of Ophthalmology and of the American Board of Otolaryngology. He received his medical education at the Medico-Chirurgical College of Kansas City, graduating in 1902.

* * *

DANIEL C. BAER, M.D.

Dr. Daniel C. Baer, 91, retired physician who practiced in Mound Ridge for more than 50 years, died at Wichita June 26. He received his medical education at the University of Vermont College of Medicine, graduating in 1887, and later studied at McGill University in Quebec, completing a course there in 1888. He was an honorary member of the McPherson County Medical Society.

* * *

BEN F. COFFIN, M.D.

Dr. Ben F. Coffin, 68, who had practiced in Kansas City about 40 years, died at a hospital there June 28. He was graduated from the Medico Chirurgical College of Kansas City in 1902 and began practice in Kansas in 1904. He was an active member of the Wyandotte County Medical Society.

* * *

JOHN C. LARDNER, M.D.

Dr. John C. Lardner, 82, retired physician in Fort Scott, died there June 28. He was an honorary member of the Bourbon County Medical Society. He was graduated from the Kansas College of Medicine in 1902 and for the next 10 years practiced in Chanute, then in Fort Scott. During World War I he served in the Army medical corps, then returned to Fort Scott and practiced there until he entered service in the Veterans Administration regional office at Oklahoma City in 1924. Since his retirement in 1937 he had lived in Fort Scott.

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THOMAS J. RANKIN, M.D., Chief of the Medical Service, Veterans Administration Hospital, Wichita.

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SLOAN J. WILSON, M.D., Assistant Professor of Medicine.

SUBJECTS TO BE DISCUSSED

The Physiological Properties of the Blood.
The Effect of Radiation on Peripheral Blood.
The Histophysiology of Peripheral Vascular Beds.
The Rationale of Hepatic Function Tests.
The Relation of Hormones to Cancer.
Selective Phagocytosis.
Disorders of the Heart Beat.
The Coronary Circulation.
Cardiac Output Determination.
The Physiology of Pulmonary Circulation.
Congestive Heart Failure.
Recent Developments in Renal Physiology.
Diagnosis and Treatment of Congenital Heart Disease.
Fundamentals of Body Fluid Maintenance.
The Excretion of Salt and Water.
The Pathology of Collagen Disease.
The Clinical Aspects of Collagen Disease.
The Control of Respiratory Ventilation.

BOOK REVIEWS

Campbell's Operative Orthopedics, Second Edition. Volumes I and II. Edited by J. S. Speed, M.D., and Hugh Smith, M.D. Published by C. V. Mosby Company, St. Louis. 1643 pages, 1141 illustrations. Price \$30.

The first edition of Operative Orthopedics was a one-volume work, compiled by the late Willis C. Campbell and published in 1939. The present second edition is a two-volume affair edited by J. S. Speed and Hugh Smith of the Campbell Clinic in Memphis, Tennessee. Besides the editors, 11 other authors have collaborated in the production of this edition. All of these authors except three are members of the staff of the Campbell Clinic.

Much of the material in the first edition has been deleted and a great amount of new material added. New chapters have been added on amputations, pre operative and post operative care, peripheral nerve injuries and new sections of previous chapters on rupture of lumbar discs, mold arthroplasty of the hip and cerebral palsy. New techniques developed since publication of the first edition have been added to bring this edition up to date.

This edition is most complete, well arranged and very readable. There is a profusion of illustrations which add to the clarity of the text. As a reference work, these volumes are a must in the library of any orthopedist and should also be of value to the general surgeon who handles fractures and traumatic surgery.—J.B.W.

* * *

The Practice of Refraction. Fifth Edition, 1949. By Sir Stewart Duke-Elder. Published by C. V. Mosby Company, St. Louis. 290 pages, appendix, 216 illustrations. Price \$6.25.

In accordance with his comment that the prescription of glasses is "not merely a matter of placing lenses in front of a patient and ordering those which give the highest visual acuity," Sir Stewart Duke-Elder, in the fifth revision of his well accepted textbook on refraction, has added material on the nature, incidence and biological determination of refractive errors and the transient changes in refraction. Discussion of aniseikonia has been extended, a chapter on anomalies of convergence has been added, and descriptions of streak retinoscopy and velonioskiascopy are included. The discussion of strabismus has been limited to its relation to refractive errors; a conservative evaluation of orthoptic treatment is given. Application of the cross cylinder in subjective refraction is treated briefly. The appendix contains tables and official visual requirements of the Services of the British Empire.—D.J.S.

Atlas of Roentgenographic Positions. Volumes I and II. By Vinta Merrill. Published by C. V. Mosby Company, St. Louis. 708 pages, over 1500 illustrations. Price \$30.

This two-volume atlas is devoted to photographs, ink drawings, and x-ray film illustrations related to positioning in roentgenography. Nothing is left to the imagination of the technician who can understand simple directions for placing the patient and angling the x-ray tube.

Drawings and descriptive paragraphs are used in describing anatomy that pertains to the information the technician should have. The x-ray technician is given an insight into the history, ethics, and art of his specialty.

The wealth of material in this atlas makes it a most desirable addition to any x-ray department.—G.M.T.

* * *

Nutrition and Diet in Health and Disease. Fifth Edition. By James S. McLester, M.D. Published by W. B. Saunders Company. 800 pages. Price \$9.00.

The information is clearly expressed by the author and well annotated. Many discussions are in the light of recent experiments and thought, and, in each case, authors are given credit. Bibliographies at the end of the chapters provide good sources of continued study.

Many reprints of charts, graphs, etc., are included. While not always contributing to the usability of the material, such information lends emphasis to the completeness of coverage. However, some food tables, such as those for diabetes, are inconsistent and do not provide a practical method of instructing the patient.

Material is conveniently arranged, for the most part. Occasionally it appears that certain subjects could be treated in other divisions avoiding repetition. For example, digestibility is considered under the chapter entitled "Nutritional Factors of Lesser Importance" and then repeated under discussions of separate food items as milk, meat, etc.

The book would be suitable and valuable to anyone who is interested in nutrition or diet therapy and who has a scientific background. Because the subject matter contains much recent scientific knowledge, it will probably be used frequently by members of the medical profession.

Excellent information is given on many topics, for example low calorie diets for cardiacs, water balance, and adequate diets necessary for hypertension.

The author is to be complimented on his emphasis upon maintaining the patient at an optimal state of nutrition and his constant repetition of not allowing nutrition to suffer in special diets.

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THE KANSAS PRESS LOOKS AT MEDICINE

For this section of the Journal the Editorial Board selects representative opinions from the press. These are presented to give the medical profession a review of current editorial expression and include opinions that are both favorable and unfavorable to medicine. The Editorial Board would appreciate hearing from the membership regarding selection of material for this column.

Uncle Sam Has No M.D. Degree

Men who like to call themselves liberals have one outstanding trait. They are always kicking and anyone who opposes their wild-eyed schemes is classed as an obstructionist or a conservative. Right at present the victim of this particular brand of so-called liberalism is the medical profession and a drive is being made to make people believe they're being denied medical attention which only the government can provide.

Doctors have struggled for centuries in laboratories and at bedsides to learn the secrets of keeping the human body alive and healthy. Many dread diseases have been eliminated and the span of life has been doubled in a few decades. Not so very long ago appendicitis was treated with opium pills, poultices and castor oil. This form of treatment was cheap—but most of the patients died. The diabetic was given codeine and put on a diet. Again the doctor's charges were low—but, as the obituaries read, the patient departed this world. The enormous progress in medical care, and the ever-growing complexity of treatment, has naturally added to the cost—as does anything which contributes to modern living.

A lot of cockeyed schemers, whose blood pressure would have killed them long ago if a few competent physicians had not been at hand, are telling the people how neglected they are and that the medical profession has got to do better or Uncle Sam will have to step in and take care of all their needs from the cradle to the grave at a cost of six or eight million dollars a year to be taken out of all pay checks each month.

In the palmy days of the Roman Empire the average lifetime was about 25 years. By 1700 it had risen to 33 years in the most advanced nations. Now it is crowding 70 years. And it has been done by the eternal vigilance of the medical profession, not by socialized medicine. After the shouting has died down and the professional psalm-singers have taken up some other fad, it will still be up to the doctors to keep us healthy. And they won't need some bureaucrat in Washington to tell them how to do it.

Voluntary prepaid medical plans, such as the Blue Cross and other similar organizations, have made it possible for the majority of Americans to anticipate

doctor and hospital costs by paying small monthly sums. The small proportion of people who cannot pay anything at all can be cared for without compelling everybody to go into it whether they need it or not. The country does not want or need a grandiose medical scheme that would cost billions of dollars and subject the doctors to the political whims of some bureau at Washington.

Socialized medicine would do no more than make the government a bill collector for the doctors, payable in advance, with a part of the money retained for bureaucratic activities. Uncle Sam has no degree in medicine and medical advancement will be achieved in the future by the doctors, as it has since the days of Hippocrates, in spite of those self-styled liberals who are trying to woo votes by making the health of the nation a political issue.—*F.J.C., Kingman Journal, February 24, 1949.*

* * *

Two Kinds of Medicine

Dorothy Thompson devoted one of her recent columns to the proposed bill to establish compulsory government health insurance. She observed that she had lived under socialized and regimented medical systems in England, Austria and Germany. She then had this to say about them: "They cost the people far too much. They provide inferior services at a high price. They are incapable of dealing with really serious and complicated cases. They result in two sorts of medicine—good medicine for the well-to-do; and bad for the masses, at high cost to those who can least afford it. Any they build up a vested interest of physicians and bureaucrats which the people will never get rid of."

Miss Thompson can hardly be branded as a black reactionary—which is one of the labels the socialists often pin on those who do not agree with the premise that the cure for everything is more and more government and more and more taxes of all kinds. She observes that this country certainly does need better health service, and that people who honestly can't afford to pay for adequate care must be assisted. But, as she says, "Just why this most inventive country seems compelled blindly to copy social measures originating elsewhere is baffling." A segment of the American people, apparently, believe that we can succeed with schemes which have been an utter failure everywhere else. And that attitude, if it is reflected in action, could be disastrous.

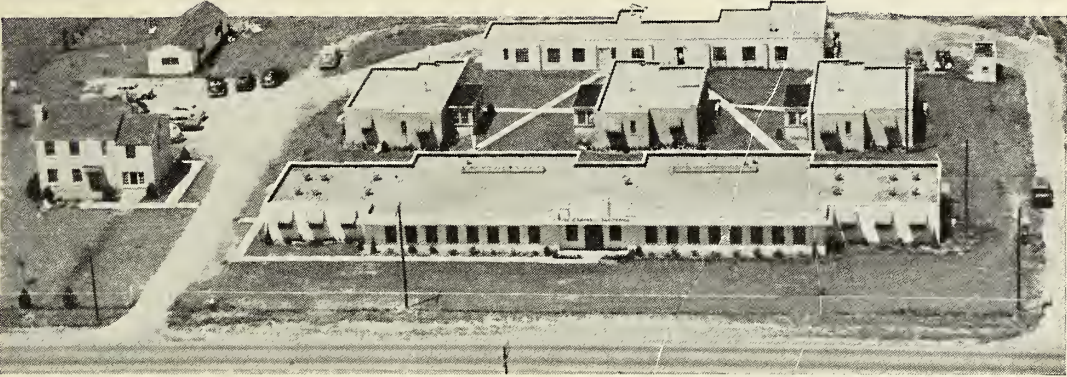
The compulsory health insurance plan is simply one of the planks in a platform that would create a total state. Lenin himself ranked socialization of medicine high among communist objectives. And socialized medicine will come as surely as night follows day if we give the bureaucrats control over medical practice.—*Burr Oak Herald, February 10, 1949.*

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ABSTRACTS FROM CURRENT LITERATURE

Diarrhea of the Newborn

Diarrhea of the Newborn. By S. H. Clifford, *New Eng. Jnl. of Med.*, 237:1-8, Dec. 25, 1947.

Epidemic diarrhea of the newborn is not a distinct entity but a miscellaneous group with various causes and a common symptom. The infants have been infected via the fecal-oral route through demonstrable breaks in technic. Bottle feeding presents a particular hazard since the same personnel handle the diapers, excreta and feeding equipment. Only scrupulous scrubbing of the hands can render them free from fecal contamination. Other epidemics have been traced to carriers in the nursery personnel. A specific pathogen has not been identified in most epidemics but virus should not be assumed unless the laboratory work is of very high type.

Infection control among adequate nursery personnel and scrupulous observance of special technics are essential in prevention of disease. Hospital construction must attend to the protection of the newborn infant. Massing of infants in one nursery should be avoided. Limiting the number of infants in a nursery unit of from six to 12 has been suggested. Airborne infection must be controlled. Ultraviolet radiation, propylene glycol vapors, the use of oil on the floors and bedding, more efficient face masks, and proper spacing of bassinets deserve attention. Instant isolation of diarrheal infants and nursery quarantine must be practiced in event of an outbreak. Should the infection become widespread, the entire obstetric unit must be closed to all admissions.—D.R.D.

* * *

Aureomycin in Pneumonia

Aureomycin in the Treatment of Primary Atypical Pneumonia. By Yale Kneeland, Jr., Harry M. Rose and Count Dillon Gibson, *Am. Jnl. Med.*, VI-1, 41-50, Jan., 1949.

The authors discuss the new antibiotic with reference to its source, therapeutic efficacy, toxicity studies and results of treatment in experimental animals. Aureomycin is effective against many bacteria, both gram positive and gram negative, also against rickettsial infections and against two virus infections in mice, lymphogranuloma venereum and psitticosis.

Q fever is known to be susceptible to aureomycin. Primary atypical pneumonia cannot be differentiated clinically from Q fever or from human infection with the psitticosis-ornithosis group of viruses.

Ten cases of primary atypical pneumonia were

treated with aureomycin and are reported in detail; five others treated after the article was submitted for publication responded satisfactorily.

Criteria used for selection of cases: (1) each patient presented the clinical features of cough, fever, pneumonitis, normal leukocyte count, normal bacterial flora of sputum, etc., (2) the illnesses were unaffected by penicillin in full doses for at least 48 hours, (3) all were getting worse when aureomycin therapy was instituted.

The average dosage of the drug used was one gram every six hours, gradually reducing the amount in succeeding days. When sufficient amount of the drug was available administration was continued until the temperature had been down several days and the patients were substantially improved.

Two of 10 patients developed nausea, and one patient presented anemia during convalescence. None of the other patients showed toxic symptoms.

Eight of the first 10 patients treated showed the development of cold agglutinins at the expected period in the disease.

Nine of these 10 patients showed a fall in temperature to normal within 12 to 48 hours after institution of this new antibiotic, with corresponding improvement in their general condition. In two of these exacerbation occurred after treatment was discontinued. In the other seven treatment was continued and complete recovery occurred.

The data presented by these authors suggest that aureomycin has an antiviral effect against the agent that causes atypical pneumonia in man.—C.C.U.

* * *

Infertility or Sterility in the Female

Infertility or Sterility in the Female. By M. Edward Davis, *Med. Clin. N.A.*, 32-1, 37-56, Jan. 1948.

The fact is emphasized that the sterile couple, not the sterile individual, is at fault. In one-third of the cases the husband is at fault, and in another percentage he contributes to the sterility.

The author lists first the organic factors which influence fertility. Among these are the great variety of congenital anomalies, some of which are unimportant and others of which may produce uncorrectable sterility. Infection in the upper genital tract frequently causes sterility; rarely is this true in the lower genital tract, though fertility may be reduced. Neoplasms such as fibroids reduce fertility but rarely cause sterility. Ovarian neoplasms rarely interfere with fertility, unless they produce hormonal substances. In most instances, the position of the uterus is of little importance in sterility problems.

The importance of the history in the study of sterility is emphasized. The value of careful pelvic

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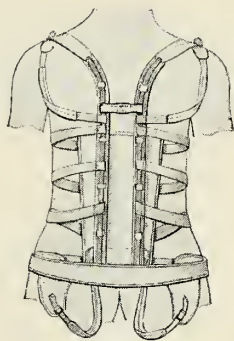
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study is obvious. In this connection, the cervix should be carefully examined, with particular reference to erosions, lacerations, endocervicitis, strictures of the lumen, and character of the cervical mucus.

As a next step in the survey, this author recommends x-ray visualization of the uterus and tubes, using an opaque, non-irritating contrast medium, and maintaining the pressure on injection at less than 250 m.m. of mercury. Any subsequent check on patency can be made by gas injection.

He suggests three procedures for determining the presence or absence of ovulation. One is the endometrial biopsy at onset of bleeding, which on microscopic examination reveals typical progestational effects after ovulation. A second procedure is the quantitative measurement of pregnandiol glucuronidate in the urine after ovulation. A third procedure is a record of basal temperatures, with characteristic rise occurring at ovulation.

The importance of thyroid function and of BMR determination in each patient is emphasized.

The treatment in each case is, of course, based upon the cause if it can be determined. In the absence of any demonstrable organic or endocrine etiology, determination of the date of ovulation and concentration of efforts at conception at that time may be helpful. When there is endocrine cause, in either the man or woman, the prognosis is not good since most gonadotropic substances available at present have little effect. If there is obvious organic cause for sterility, the patient should be informed.—E.J.R.

* * *

Anticoagulant Therapy

Long Term Anticoagulant Therapy for Cardiovascular Diseases. By William T. Foley and Irving S. Wright, *Am. Jnl. Med. Sc.*, 217-2, 136-142, Feb., 1949.

The authors mention categories of patients who need anticoagulant therapy for years. The problems

mentioned are: old rheumatic heart disease complicated by valvular damage and auricular fibrillation; phlebitis migrans; recurrent thrombo-phlebitis; recurrent coronary thrombosis. Experience gained and difficulties encountered in a group of 19 patients who were maintained on dicumarol for from five to 20 months are discussed with some case reviews. The Link Shapiro modification of the quick thrombin time was used and the results were expressed in seconds of time and not as percentage of activity. Patients were kept hospitalized three or more weeks and daily prothrombin times done until the patients were ambulatory and until the daily dicumarol requirements were evaluated. Then they returned twice weekly for prothrombin times and dosage prescription. If blood prothrombin levels showed only minor fluctuations the interval between tests was prolonged to one week and in rare instances to 10 or 14 days though this was not recommended. No dose of dicumarol could be computed on weight, age or other basis. Weekly maintenance dosage ranged from 175 mg. to 800 mg. The average requirement in a stable patient has remained constant over as long as one and a half years. Requirements occasionally change during menstruation (need for more dicumarol); changes in diet (more protein, alcoholic debauches) have changed the dicumarol requirement.

When prothrombin time (normal 14 or 16 seconds) reached 60 seconds, two doses of 72 mg. of vitamin K intravenously were routinely used with four hours between them. Prothrombin times over 300 seconds have occurred without serious hemorrhage although 60 is the upper limit of safety.

No toxicity was detected in any of the patients studied and while on therapeutic level dosage no thrombo-embolic episodes occurred. No serious hemorrhages occurred in the series and the therapy allowed the patients to lead normal lives and support themselves.

The dangers of improperly performed prothrombin time were emphasized.—P.W.M.



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Papers Presented at the First Annual Mid-West

Cancer Conference

WICHITA, KANSAS

January 20-21, 1949



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GUEST SPEAKERS

Lauren V. Ackerman, M.D.

Assistant Professor of Pathology and Surgical Pathologist, Washington University, St. Louis, Missouri; Consultant Pathologist at Ellis Fischell Cancer Hospital, Columbia, Missouri.

Morris Belkin, Ph.D.

Senior Pharmacologist, Chemotherapy Section, National Cancer Institute, Bethesda, Maryland.

Alexander Brunschwig, M.D.

Attending Surgeon, Memorial Hospital, New York, New York; Professor of Clinical Surgery, Cornell University Medical College, New York, New York.

Charles S. Cameron, M.D.

Medical and Scientific Director, American Cancer Society, New York, New York.

Talbert Cooper, M.D.

Hematologist, Mayo Clinic, Rochester, Minnesota.

Walter L. Palmer, M.D.

Professor of Medicine, University of Chicago, Chicago, Illinois.

Herbert E. Schmitz, M.D.

Professor and Chairman of Department of Obstetrics and Gynecology and Chairman of Tumor Clinic, Loyola University School of Medicine, Chicago, Illinois.

W. Walter Wasson, M.D.

Attending Radiologist, Beth Israel Hospital, St. Anthony's Hospital and Swedish National Sanitarium, Denver, Colorado; Past President, Radiological Society of North America.

Nathan A. Womack, M.D.

Professor of Surgery, State University of Iowa College of Medicine, Iowa City, Iowa.

PROGRAM

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No. 8

Some Things We All Should Remember About Cancer

W. Walter Wasson, M.D.

Denver, Colorado

Certainly I can't present to this conference all of the things we should remember in our daily work with cancer. The things I have to offer have been an accumulation of a good many years and are more or less of a general survey.

In this paper, there is no attempt to present something new concerning cancer. It is a presentation of the various things which I, myself, find necessary to remember in the daily routine of the diagnosis and treatment of the cancer patient. Even after many years experience in treating cancer, I still find that on busy days I am apt to be too hurried in the examination of the patient or the diagnosis appears to be too evident. As a result, the treatment will be inadequate. In other words, I have made practically every mistake which anyone can make in the treatment of cancer. I think a little confession right at the beginning may be good for our patients.

What Is Cancer?

In the beginning, we may ask ourselves the question as to what is cancer. Certainly, there are various degrees of malignancy. The tumor may be malignant as to position in the body or it may be malignant as to its ability to produce metastases. Also tumors vary a great deal in their resistance to any form of treatment: surgery, radiation therapy or chemical therapy. We all recognize that there is a type of cancer which resists every present-day known method of treatment. Wherever found, a cancer cell is no longer subject to the growth controls of the body and has the ability to form metastases. In other words, the body has practically no resistance to the growth of cancer.

There are various theories as to the etiology of cancer. There is one theory that cancer is due to a mutation of a cell or cells as a result of inheritance, chemical changes within the body, or chemical irritation. Certainly there is plenty of proof that certain plants and animals can and do undergo muta-

tion. It is a little difficult to understand why a large group of cells in a certain location in the body will all undergo mutation changes at the same time. There are those scientists who are beginning to think that the virus infections not only can produce cancer but can satisfy all the requirements of the origin and growth of the cancer tumor. If a virus is the cause of a certain type of cancer then our approach to the treatment of this type of cancer will be entirely different. Whatever may be the cause of cancer, its treatment must be considered as a major procedure. In other words, we should approach any case of cancer with the same care and precision that we would any major operation.

Accuracy in the Treatment of Cancer

Even the small cancerous lesion may have a catastrophic result. The physician in treating cancer must be 100 per cent accurate in order to obtain the desired result. Such a degree of accuracy is difficult to obtain and can only be had by industry and by meticulous attention to every detail in either the diagnosis or treatment. As just stated, I frequently find that I have overlooked some minor detail in either the diagnosis or treatment which later proves to be a determining factor in the ultimate outcome of the case. More and more, I am impressed by the necessity for meticulous accuracy in both the diagnosis and treatment of cancer.

Diagnosis of Cancer

In the diagnosis of cancer, as in any other disease, a good clinical history is the first step. Not only does the surgeon, internist, or radiologist wish to know whether or not the patient has a tumor but also the state of the patient's health. I think often we are apt to be so engrossed in the treatment of the tumor that we forget the general health. The patient must be considered as a chemical laboratory, and we are gradually learning more about the part chemistry

plays in the production of cancer and its treatment. The physician also wishes to know whether or not there has been recent growth of the tumor, and if there has been recent growth then that is a most important finding and means that the tumor is active. There are times when the clinical history is the deciding factor in the management of the case. For example, if a woman past the menopause has been free of vaginal discharge and then suddenly begins to develop a purulent or semipurulent discharge from the uterus, it is a strong indication of beginning malignancy of the uterine cavity. If a curettement of the uterine cavity is negative, or if a lipiodol examination of the uterine cavity is negative, and there is still an unexplained purulent or semipurulent discharge, proper consultation should be had, and a hysterectomy should be done. You will note that I speak of the proper consultation. It is much safer to do a hysterectomy at such a time rather than to wait for a more positive diagnosis. To await a positive diagnosis is to provoke disaster. Frequently there will be a small malignant ulcer involving the uterine cavity which cannot be detected by diagnostic methods.

The physical examination either of the cervix and uterus, or of a tumor of the breast, or of a tumor of the abdomen must be thorough but without trauma. Frequently the pathologist will report that the cancer cells are already in the lymphatic chains and ready to be transported to some other part of the body. Repeated examinations give invaluable information as to the progress of disease and as to the treatment which is to be instituted. Recurrent tumors after either surgery or radiation therapy require repeated examinations to determine whether or not there is still activity of the tumor cells. Such examinations are absolutely necessary for guidance in the subsequent treatments.

There have been various laboratory procedures devised for the demonstration of cancer. Papanicolaou's method for the diagnosis of cancer cells is one of the more recent and more refined. It evidently has its advantages in that only a few cells are necessary for a positive diagnosis, but it requires highly trained pathologists. At the present time there are only a few pathologists who feel qualified to make such diagnoses. A negative diagnosis by this method must be considered as any negative diagnosis by any other method while a positive diagnosis of cancer can be most valuable.

A Discussion of the Biopsy

A section of the tumor made by biopsy is still the most reliable single diagnostic finding. But even where there is cancer, it must be remembered that the section may be removed from a benign portion of the tumor, and it is impossible to section the entire tumor without removal of the entire tumor

itself. In other words, it becomes extremely important from what portion of the tumor the section is taken. Again, the clinical history may be the deciding factor. I frequently see surgeons whose clinical judgment as to the probable malignancy of the tumor as determined from its appearance is almost of equal importance to that of a biopsy. Such a surgeon has the advantage of seeing the tumor in its entirety and *in situ*. I have seen such cases where the biopsy would be negative and yet the clinical appearance would be that of malignancy and would subsequently be proved to be such. Only recently I saw a woman with tumors in the breast, nodules in the axilla and above the clavicle, and with small skin nodules. Yet, a nodule removed from the axilla proved to be a fatty tumor, and a nodule removed from the skin revealed no cancer cells. Certainly, this patient is entitled to treatment for a malignancy of the breast.

Two years ago another patient presented a cervix that clinically was malignant, but upon which a biopsy made by the surgeon was negative. She was observed by the surgeon for two months and dismissed. One month ago, the same surgeon made a biopsy of the cervix of the same woman, and it was positive for cancer. What should have been the treatment of this patient two years ago: surgery, radiation therapy, or observation?

I come again to the thought that we should not always await a positive diagnosis of cancer by laboratory methods. To do so will often be disastrous and, in my opinion, is against the teaching of the early diagnosis and treatment of cancer. It is much better to remove the lesion which may become cancerous than to subsequently treat a definite cancer which carries a high mortality rate. No doubt many mistakes will be made, but the patient will not have assumed any great risk. In other words, I believe the risk in operating such cases at that time is less than the chance of error and the subsequent risk the patient would assume. It is needless to add that the treatment of the precancerous lesion by surgery, radiation therapy, or continuous observation should be carried out only under the control of proper consultation. It is not the responsibility of the individual physician. It does not mean that every woman should have a hysterectomy or her breast removed, or every man a prostatectomy. All tumors are not malignant, and all ulcers are not malignant, and an attempt should be made to obtain the correct diagnosis before any method of treatment is instituted.

• Recognized Methods for Treatment of Cancer

There are three recognized methods of treatment of cancer: surgery, radiation therapy, and chemical therapy. Of these methods, surgery is usually, and perhaps rightly, given first consideration, the reason being that if a cancerous lesion can be removed sur-

gically without too much destruction of surrounding tissue then it is the method of choice. It is the method of choice because a cancerous lesion if entirely removed from the body has very little likelihood of recurrence. This statement is qualified as the factors which originally produced the cancer may not have been removed by the surgical operation. In cancer of the bladder, there is quite a tendency for recurrence after total surgical removal of the cancerous lesion and where it may be possible that the entire original tumor was removed. Whatever the predisposing cancer factors which produced the cancer in the bladder in the first place, they may not have been removed by the surgical operation.

Radiation therapy by x-ray, radium and the radioactive isotopes also has an important place in the treatment of cancer. Here the value of the treatment lies in the destruction of the cancer cells *in situ*. Whether or not radiation therapy should precede surgery, or follow surgery, or not be used at all, is often a controversial point and should be decided by consultation. In cancer of the breast, the place of radiation therapy has not been definitely established except in the third and fourth stage cases where the malignancy is already beyond the reach of the surgeon. Radiation therapy has proved its value in cancer of the breast, but if a nodule in the breast can be completely removed by surgery, then there again, surgery should be the method of choice. In the second stage cases with the involvement of the axillary nodes or the inflammatory involvement of the skin, it may be well to precede operation with radiation therapy. Whichever method is instituted, either surgery or radiation therapy, it must be adequate; and this means a careful examination and an accurate diagnosis.

Chemical therapy in the treatment of cancer is just coming into its own and is as yet rather poorly understood. However, there are enough good results from the use of testosterone in the female or of stilbesterol in the male to demonstrate the value of chemical therapy. I stated before that the patient must be considered as a chemical laboratory, and the general state of health plays a very important part in both the production of cancer and in the recovery derived from any form of treatment. Unfortunately, in many cases, the internist is not vitally interested in cancer, and the surgeon and the radiologist are many times deprived of the aid which the internist should be able to give.

The Follow-Up of the Cancer Patient

The *follow-up* of the patient after either surgery or radiation therapy is almost of equal importance to the original operation or treatment. The follow-up should be thorough, and accurate records should be kept rather than for the physician to depend upon

his memory. For example, a woman has the left breast removed for cancer and is sent for radiation therapy following the operation. At the time of the examination preceding the radiation therapy, a nodule is found in the opposite breast. Fortunately, the surgeon's record states definitely that there was no nodule in the breast preceding the operation. Such a record is of vital importance to the patient. The time interval for the follow-up examinations should not, in my opinion, be every six months following operation or radiation therapy but every two weeks or one month immediately after surgery or radiation therapy. A six-months interval is only of value for statistics and of no value to the patient. The time interval should not be lengthened until several months have elapsed if the intent is to discover any recurrence and institute treatment of such a recurrence.

The Reactions from X-Ray Therapy

The reactions from radiation therapy are very poorly understood by most physicians, and I have been accused of producing everything from allergic shock to ingrown toenails. The x-ray is still mysterious. It is so mysterious that it receives the blame for almost anything that the patient may have after a course of radiation therapy. The radiologist should always be consulted before a statement is made to the patient by the attending physician. All the complications following known surgical or radiation treatment of cancer should not be considered as a result of the cancer, and yet this is so often the attitude of the medical profession. Recently, a patient with cancer of the cervix was treated by radiation therapy. Also, radium was placed in the cervix and uterus. The patient later developed dyspnea and also had an ulcer on the left shoulder with glands in the left neck. There were, also, inflamed masses in the gluteal regions. The pelvic examination was essentially negative, and an x-ray examination of the lungs was negative. The attending physician insisted that the patient had carcinomatosis. A week later an autopsy revealed a bronchoesophageal fistula which was not malignant. The ulcer over the left shoulder and the glands of the left neck were not malignant. The pelvis was negative except for some malignant areas remaining in the cervical canal. Cancer was not the cause of death. Neither should an attitude of hopelessness be assumed by the general physician upon finding that the patient has been treated for cancer. Careful study may reveal other causes of the illness which may lead to successful treatment and the recovery of the patient.

In general, it may be said that the failures in the treatment of cancer are due to getting the patient too late, or to inaccurate diagnosis, or to inadequate treatment.

Cancer of the Stomach

Walter L. Palmer, M.D.

Chicago, Illinois

The American Cancer Society estimates that at present there are approximately 193,000 deaths from cancer annually; in the next 50 years it is anticipated that the annual number of cancer deaths will rise to 324,000, an increase of more than 50 per cent. Cancer of the digestive tract causes more deaths than cancer of any other system. We do not know why cancer of the stomach or cancer of the other portions of the digestive tract is more common in the male than it is in the female.

Age plays a very important role as may be seen in the sharp increase and continued rise in deaths per decade after the age of 40. This illustrates again the dictum of Dr. H. G. Wells, former professor of pathology at the University of Chicago, to the effect that everyone would develop cancer if he lived long enough.

With regard to cancer of the stomach itself, we are all acquainted with the insidious nature of this disease. It does not begin as a catastrophic event even though it terminates as such.

To illustrate this point I will describe a patient and attempt to set the episode of carcinoma of the stomach against the background of his life. There were the ordinary colds and infectious diseases of childhood. For 15 years in middle life the patient suffered from chronic arthritis. At the age of 52 he developed bronchial pneumonia from which he recovered. Otherwise he was perfectly well.

In his 56th year, in March, he developed an ordinary attack of diarrhea and cramps such as any of us might have and as we all see in patients frequently. It passed after three or four days and was forgotten. In September of that year he had one transitory episode of vomiting, with no loss of weight, no abdominal pain, no anemia, no nausea—none of the classical manifestations of gastric cancer. In October, however, he had another transitory episode of vomiting followed by epigastric distress, not a severe pain, just dull discomfort different from anything he had had before. This, then, was a mild symptomatology, still no weight loss, still no anemia or anything of that sort; and yet, in November the x-ray of the stomach showed a carcinoma. The gastroscopic examination confirmed that diagnosis of a so-called Type III carcinoma, of the Borrmann classification. He was operated on in December, and a subtotal gastrectomy was done. That was at the age of 56. At the age of 59 he came into the hospital with a fever of unknown origin which disap-

peared and he was discharged feeling well. Now, at the age of 66, he is still alive and in excellent health. So here we have, among other things, a ten-year survival of a patient following resection of a carcinoma of the stomach. This tumor seems to have been a slow-growing, almost benign type of carcinoma.

A second patient illustrates exactly the opposite situation. In a man admitted to the hospital with minor symptoms of 18 months' duration, the x-ray examination showed a small niche on the lesser curvature (Figure 1). The symptoms on admission

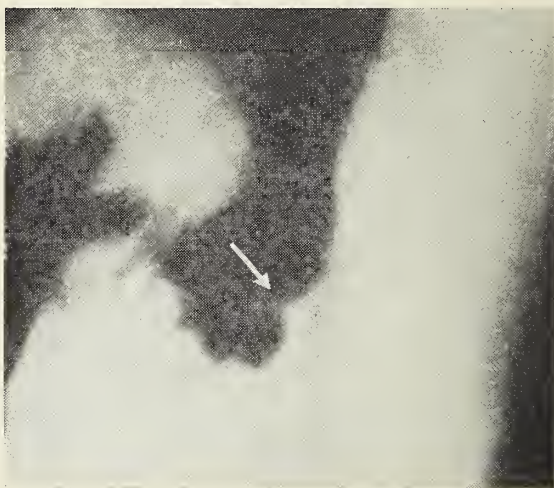


Figure 1. Small ulcerating neoplasm simulating a benign ulcer.

were primarily those of purpura haemorrhagica. His blood picture showed a severe anemia with the presence in the circulating blood of nucleated red cells, giving evidence of bone marrow metastases. The sternal biopsy confirmed this diagnosis. The patient died about three months later.

The interesting thing is that when the pathologist held the stomach in his hand and knew that the skeleton was riddled with metastases, he neverthe-



Figure 2. Low power. Cross section of the lesion. The architecture is that of benign ulcer but carcinoma is present in the mucosa on both borders and in the base.

less said that the lesion looked like a benign ulcer rather than a malignant one. It was an ulcerating carcinoma (Figure 2) which had metastasized rapidly, a so-called "rapidly metastasizing tumor of Jarko." Gastroscopecally this ulcer did not look benign; it looked malignant. In the resected specimen, the architecture of the lesion was typically that of a benign ulcer. The entire muscularis was destroyed and replaced by scar tissue, but microscopically there were tumor cells visible throughout this scar tissue and on either edge in the mucosa. There was no reason at all to think that this was a so-called carcinomatous degeneration in a benign ulcer but rather that it had been a primary carcinoma of the stomach with peptic ulceration taking place in the tumor. The peptic ulceration produced a lesion which looked grossly like a benign ulcer and histopathologically had many of the characteristics of a benign ulcer, yet was from the beginning an ulcerative carcinoma.

There is also evidence that this lesion developed and spread in a very wild manner. It metastasized early. It seems to me that we can never expect to diagnose this particular type of gastric cancer in time to cure it with surgery. In between these two extremes of what might be called "chronic" and "acute" gastric cancer there is that great variation of tumors, some of which can be resected early enough for long survival and some of which cannot be. They might be called, shall we say, "subacute" cancer.

We are in the habit of trying to classify gastric cancers in terms of the old Borrmann classification. Borrmann Type I is a polypoid or medullated, non ulcerating tumor; it grows into the lumen. Type II is a localized ulcerated tumor. Types III and IV are ulcerative invasive neoplasms without a sharp edge or tendency toward localization. By and large, the Borrmann Type I and II cancers are relatively benign; they are much less malignant than the Borrmann III or IV, particularly the IV.

There is some sort of relationship, too, between gastric cancer, pernicious anemia and atrophic gastritis; it may be seen best, perhaps, in these Borrmann Type I tumors. The story of a particular case is illustrative. A physician developed pernicious anemia in 1926 with a red blood count of 1,500,000. Achlorhydria was present. Fortunately just at the right time Minot and Murphy announced the treatment of pernicious anemia with liver, so he ate liver and his blood count in three months rose from 1,500,000 to 4,500,000. The hemoglobin was normal. However, the roentgenologist had demonstrated a pedunculated tumor in the stomach; in November of 1926 the pedunculated tumor was removed.

It is of interest that this tumor when examined histopathologically was found to be an adenocar-

cinoma, judging from sections through the periphery of the polyp, but sections through the stalk showed no malignancy. The tumor was about the size of a small lemon. That was in 1926. In the period from 1926 to 1934 the patient faithfully took liver and later liver extract, and by so doing maintained a normal blood count. In 1934, although there were very few symptoms—a little tugging in the epigastrium—the x-ray examination was repeated and a tumor was demonstrated (Figure 3).

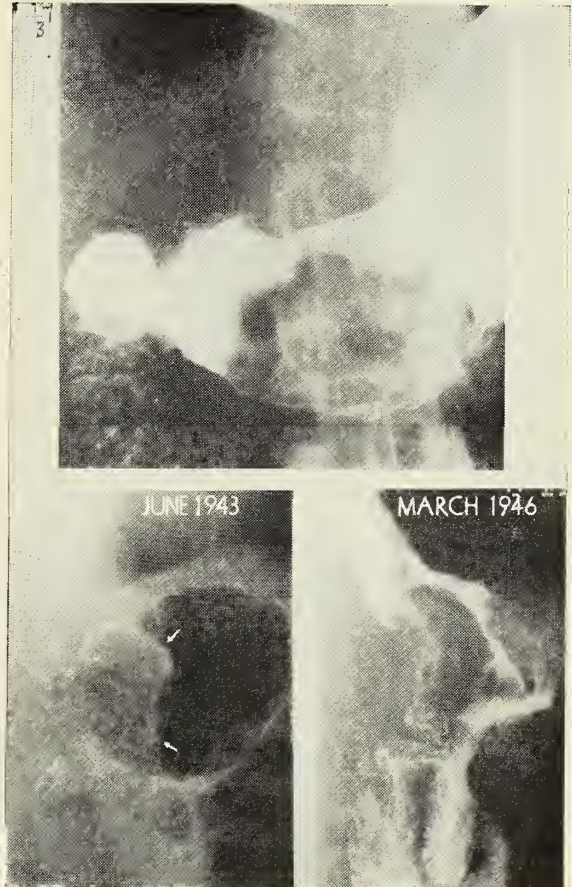


Figure 3. Polypoid carcinoma of the stomach resected in June, 1934, recurrent in June, 1943, causing esophageal obstruction in March, 1946. Patient failed to survive exploratory laparotomy.

A subtotal gastrectomy was done. A polypoid tumor was found and sections showed it to be a mucinous adenocarcinoma with extension through the wall of the stomach to the serosa, some involvement of the peritoneum, and involvement of the omentum overlying it. In spite of that fact, this man lived normally from 1934 to 1944 when a recurrent tumor was demonstrated in the gastric stump. He had a secondary anemia in 1944, caused by bleeding from the recurrent tumor, but no other symptoms. Even after the tumor was demonstrated in 1944 he continued to live. His blood count and hemoglobin returned to normal with the administration of iron.

Obstructive symptoms did not appear until 1946. He then died following an exploratory laparotomy. Death occurred then 12 years after resection of the cancer and two years after the demonstration of the recurrent tumor in the gastric stump. This story illustrates the very slow rate of growth of this particular type of tumor or at least of the tumor in this particular patient.

Now an interesting problem is why this tumor differed so in its growth from that of the patient who died from purpura haemorrhagica less than two years from the onset of symptoms. Is there a biological difference in the tumor? Or is there a factor of resistance on the part of the host? These are problems which will have to be resolved in the future.

Another instructive case is an exception to the picture I have presented in that a Type IV tumor proved to be a slow-growing lesion. This patient, who also was a doctor, had had a duodenal ulcer coming on after the first World War but manifesting itself particularly in the middle of the twenties with two massive hemorrhages. A gastroenterostomy was performed in 1927. Following this he got along well with no major difficulties. Sometime in the thirties he began to develop dyspepsia—a mild epigastric distress or "indigestion." Finally in 1941 he had an x-ray examination which was reported as showing a normal gastroenterostomy but nothing else of significance. The mild dyspepsia continued. In March of 1948 he lost a few pounds in weight and had three or four minor episodes of vomiting, so another x-ray examination was made.

The films taken in 1941, which we were fortunate

in obtaining, showed the upper part of the stomach with normal rugal markings (Figure 4). Barium passed into the jejunum through the gastroenterostomy opening in a perfectly normal fashion but the antrum didn't fill. No barium at all went through the antrum into the duodenal bulb and into the second portion of the duodenum. It looked as though the patient had had a subtotal gastrectomy rather than a simple gastroenterostomy, but the surgical report was positively that of a simple posterior gastroenterostomy. By 1948, seven years later, the same condition was present in that there was no evidence of an antrum; barium passed from the stomach into the jejunum without difficulty, but a polypoid appearance was noted all along the lesser curvature. The rugal markings were completely lost, up to the fundus of the stomach which appeared rather normal. A mass was present in the left upper quadrant. Operation disclosed an infiltrating tumor involving all of the stomach. The rugal markings were lost because the whole stomach was infiltrated by a leather-bottle type of infiltration (Figure 5). The patient survived a complete gastrectomy very well, and the last I heard, some eight or nine months after operation, he was doing very nicely.

This then is the infiltrating type of tumor. It gives the poorest prognosis but in this patient it had obviously been growing for seven years; at least we do not know when it started.

If one surveys the problem of gastric cancer from the overall point of view rather than from isolated cases which I have been doing thus far, what is the picture? Two or three years ago we went over the



Figure 4. The appearance in the left view is that of a stomach after partial gastrectomy; the patient had had only a posterior gastroenterostomy; the antrum presumably was occluded by tumor. In the right view six years and four months later the same picture is seen and furthermore the rugal markings have been obliterated except in the fundic portion of the stomach.

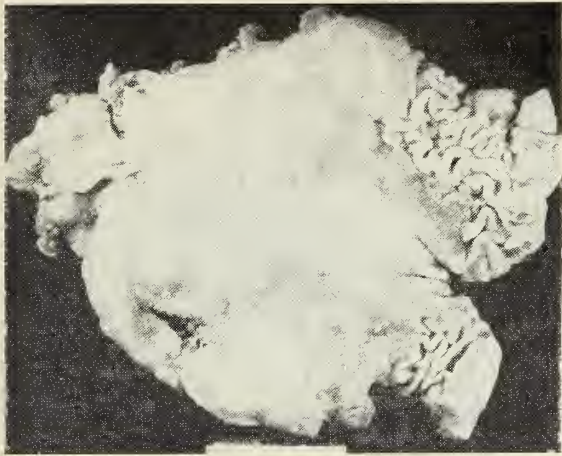


Figure 5. Total gastrectomy. The entire stomach is infiltrated with carcinoma except for the mucosa in a small portion of the fundus.

records of all the patients with gastric cancer admitted to our institution from 1927 to 1945, almost 20 years. We found 466 patients who had accepted the advice given. Of this group, 389 were subjected to operation. That means that nearly 80 patients were not advised to undergo operation, presumably because of contraindications.

My view at the present and through the past 20 years has been that all patients in whom a diagnosis of gastric cancer is made should be subjected to operation unless there are proved distant metastases. By that I would mean a carcinomatous peritonitis, Krukenberg's tumors of the ovaries, tumors in the liver, metastatic lymph nodes, or definite extension through the diaphragm into the chest. Even this view requires qualification. There have been rare reports of resection of a primary cancer of the stomach and of Krukenberg's tumors with long-term survival.

A word of warning may be given, too, with regard to the conclusion that metastases are present in the liver because a liver may be large; a liver may be firm and may appear nodular and yet the process be entirely independent of the carcinoma of the stomach. One can have benign cysts of the liver, fatty liver, or cirrhosis of the liver in association with gastric cancer.

In this group of 466, then, 389 or 83.5 per cent were subjected to operation. Resection was performed in 203; 150 survived operation. The fact that only one-third of the total group survived resection is in itself rather discouraging. If we compare the mortality and survival in two periods—from 1929 to 1940 and from 1941 to 1944—we find that the operative mortality dropped materially from 22.6 per cent to 16.3 per cent, and that the survival rate increased accordingly.

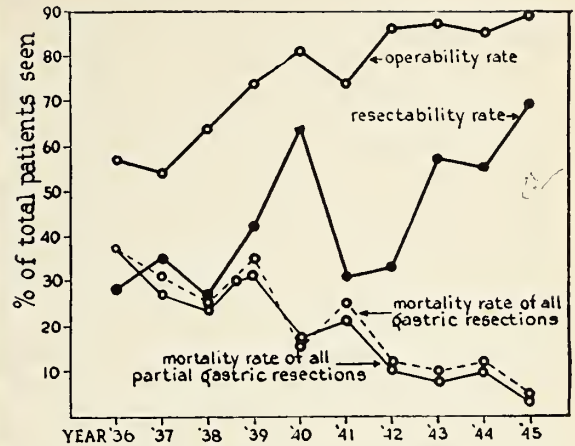


Figure 6. Operability, resectability and mortality in gastric cancer at the University of Minnesota (Wangensteen).

This point is further illustrated by statistics in a paper by Dr. Wangenstein of the University of Minnesota (Figure 6). In the period from 1936 to 1945 the operability rate increased from around 56 per cent to nearly 90 per cent; the resectability rate rose from a little under 30 per cent to nearly 70 per cent, and at the same time in spite of this rise in operability and rise in rate of resectability, the mortality from all gastric resections decreased from nearly 40 per cent to less than 10 per cent, illustrating again the tremendous advance made by the surgeons of the country in recent years.

RELATION OF TYPE OF TUMOR TO 5 YEAR SURVIVAL





Gross Classification of Gastric Carcinoma - BORRMANN		Incidence in all gastric Ca.	Incidence in 30 5 year survivors
TYPE			
I		2.9 %	50. % (15 cases)
II		17.6 %	43.3 % (13 cases)
III		16.3 %	6.66 % (2 cases)
IV		63.2 %	0

Figure 7. Classification of gastric cancer (Borrmann), incidence, and five-year survival.

Figure 7 emphasizes the statement with regard to the relationship of the type of tumor to the five-year survival. The pictures represent the Borrmann types: Type I the polypoid tumor without ulceration; Type II the sharply localized tumor, ulcerated; Type III the localized ulcerated tumor with some infiltration.

tion of the gastric wall; and Type IV with infiltration throughout the gastric wall.

We have studied gastric cancer with reference to this type of grading or classification and you will note that only three per cent, approximately, of all tumors come in the first type, 17.6 per cent in the second, 16.3 per cent in the third, and two-thirds of the tumors are Type IV. On the other hand, if we study our five-year survivors (approximately 30 patients), none of them fell within Type IV; 30 per cent of them were Type I; 56.8 per cent in Type II, and 6.6 per cent in Type III. It is only fair to emphasize, however, that one of the ten-year survivors was a Type III and that one patient described in this paper with a Type IV cancer had nevertheless probably had his tumor for more than ten years before it was removed.

Now with regard to the relationship between peptic ulcer and gastric cancer, I think that there is no evidence to indicate that benign ulcer ever undergoes neoplastic transformation, but the real problem, as Dr. McVicker said many years ago and as others have insisted, is the problem of differentiation between benign and malignant ulcers. That may be difficult. The surgeons tend to take the view that the only absolute sign is to put a section under the microscope and see whether the lesion is malignant or benign. There is a good deal to support this point of view, although I think that with careful clinical study one can arrive at an accuracy of diagnosis sufficient to justify treating many lesions as benign ulcers. But I have no quarrel, on the other hand, with the surgeon who prefers to remove them all, and certainly I would agree that any ulcerating gastric lesion ought to be considered malignant or probably malignant until proved otherwise either by most meticulous study or by removal. If all of the findings are in accord with the diagnosis of a benign ulcer, I am willing to so treat the patient temporarily and see how things go. But one must be very careful.

The presentation of an illustrative case may be helpful. A woman 41 years of age had had typical ulcer symptoms of 24 months' duration. There was no significant weight loss or anemia. An adequate free acidity was present. X-ray disclosed an ulcer of the lesser curvature with infiltration of the wall about the ulcer. Infiltration of this magnitude is almost pathognomonic of neoplasm, and the lesion looks like an ulcerating neoplasm. The gastroscopist also considered the ulcer to be malignant. The patient for entirely fortuitous reasons was treated medically for about two months. During this time the symptoms disappeared completely. It is important to remember that relief of symptoms on medical management occurs just as well in malignant ulcers

as it does in benign ulcers. X-rays taken a month later disclosed a decrease in the size of the center, but that the infiltration or induration of the gastric wall persisted (Figure 8). In pictures taken still a month later, there was no evidence of ulcer but the

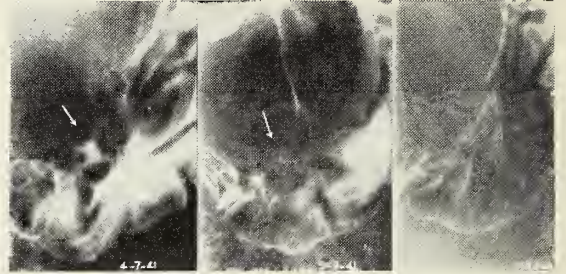


Figure 8. Ulcerating gastric cancer with disappearance of the crater on medical management. The deformity produced by the neoplasm persists.

abnormality in the wall persisted, suggesting the presence of a neoplasm with healing of the peptic ulceration. That is exactly what was found at operation by Dr. Brunschwig, in June of 1941, almost eight years ago. She is still alive and well.

The specimen contained a small ulcer not found by the last x-ray but healing was really complete. Neoplastic cells were present in the base of the ulcer and in the fibrous tissue over which the mucosa had regenerated. From this case and others there is clear evidence that healing of peptic ulceration in neoplasm can occur and that the defect may be covered with normal mucosa or with neoplastic mucosa. There are some types of gastric tumor which involve the gastric mucosa diffusely; they spread out through the mucosa. Ulceration can occur in these neoplastic mucosae and then heal.

I should like to conclude by making two points: (1) The symptoms of gastric cancer, as we all know, are in the beginning minimal—dyspepsia only. For that reason all patients with dyspepsia should be subjected to x-ray examination. The x-ray is our most valuable diagnostic method. Errors are made occasionally, but they are few. (2) I would emphasize again that all patients with gastric cancer, unless they have proved distant metastases, should be subjected to surgery with the hope and expectation that resection can be carried out. Resection should be carried out even though lymph node metastases are present because it has been well established that some of the long-time survivals are patients in whom tumor has been left behind in the lymph nodes or beyond the line of resection. Why these patients are able to survive for long periods of time isn't clear, but I presume it is related to the slow-growing biological nature of the tumor. The outlook for these patients is not entirely hopeless; they should have a resection.

Cancer of the Lung

Lauren V. Ackerman, M.D.

St. Louis, Missouri

I am a pathologist and in the past pathologists used to be relegated to some dark and dingy corner of an institution. They were often difficult to find. They didn't seem quite respectable and they often carried with them a slight aura of formalin. I think that the pathologist of today has come out of the basement to some extent and is wandering around, talking to clinicians, and even seeing patients. I have been designated by some of my friends as a "Front Door Pathologist" because I always want every bit of clinical information I can get before I make a diagnosis and, therefore, if I speak at times of clinical matters to you instead of the gross and microscopic appearance of lung cancer, I hope you will bear with me.

I'm sure that you are all aware of the increasing importance of cancer of the lung, which has apparently greatly increased in numbers. This fact, correlated with the surgical advances in this disease, makes it of great importance. For instance, exploratory thoracotomy now carries with it a very low mortality rate and surgeons are now able to resect a lung with a very low operating mortality and with hope of cure (Graham, Jones).

There are many different roentgenologic, clinical,

and pathological appearances of carcinoma of the lung. Carcinoma of the lung invariably begins in a bronchus which is centrally or peripherally located. If this bronchus is centrally located, the patient's symptoms begin as the bronchus is obstructed by the tumor. When the patient is first seen with a central malignant tumor of the bronchus, the signs and symptoms will be those of a respiratory infection, and many such cases have been diagnosed as tuberculosis, bronchiectasis, or unresolved pneumonia, and recently virus pneumonia has become a popular diagnosis. The shadow which is often demonstrated by x-ray is usually not the tumor, but result of the secondary effects of the tumor, with atelectasis, the abscess and even empyema. Such secondary inflammatory changes often clinically obscure the underlying carcinomas of the lung. In fact, *any peculiar or poorly explained pneumonic process which demonstrates an unusual clinical and roentgenologic behavior in the lungs of an older individual, particularly a male, should be suspected of being bronchiogenic carcinoma.*

You also have adenocarcinomas of the bronchus that occur more frequently in women. If you eliminate this type of bronchiogenic carcinoma and speak only of squamous cell carcinomas, then a very high percentage of them, perhaps 90 per cent, will be in males.

In carcinoma of the lung, surgeons may speak of lobectomy for carcinoma of the lung. This is not a rational procedure except as a palliative procedure,

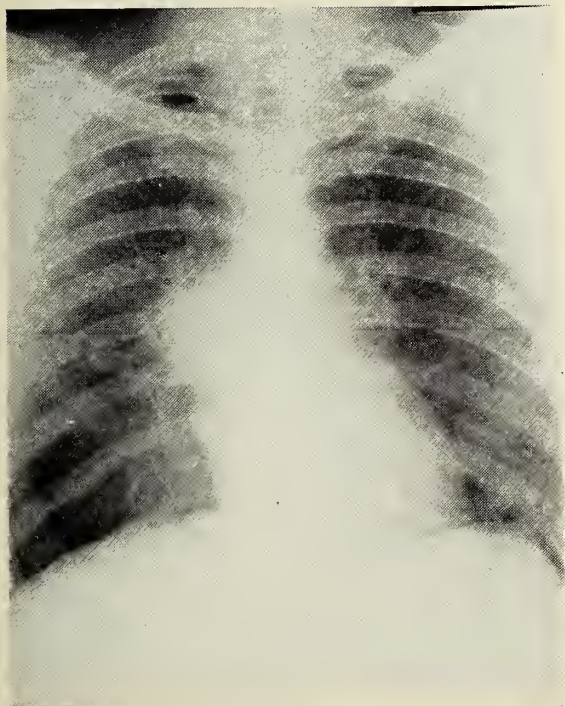


Figure 1—Radiograph of a centrally located bronchiogenic carcinoma with secondary shadows due to bronchial obstruction.



Figure 2—Gross photograph of surgically resected lung. Note large central fairly well delineated carcinoma arising from the large bronchus and growing out into the surrounding parenchyma.

not only because the lymphatic drainage is not of lobar distribution, but because of the local extent of the tumor along bronchi where it can grow beneath an intact overlying mucosa. We have had several cases in which tumor was restricted to the bronchi without evidence of lymph node involvement, but in which there was considerable extension along those bronchi. The bulk of the tumor may lie extraluminally but there may be considerable submucosal infiltration. The surgeon must resect such tumors far beyond what he can palpate grossly. The peripheral tumors have the same microscopic patterns as the central types but do not produce symptoms until an advanced stage, because they are arising from small peripheral bronchi.

These bronchiogenic tumors vary in their growth rate in the same fashion as the carcinomas of the stomach as discussed today by Dr. Palmer. It is certain that the growth rates of some carcinomas of the lung may be relatively slow (Goldman). We have seen a fair number of carcinomas of the lung with a relatively long history in which there have been changes in the bronchi suggesting that the tumor arose in an area of epidermoid carcinoma *in situ*.

Another slow growing but invasive neoplasm (the so-called bronchial adenoma) should be designated as a low grade carcinoma. This type of neoplasm occurs much more frequently in women, who often give a history of repeated episodes of bleeding.

Graham has emphasized that such tumors should be treated surgically by pulmonary resection, not attempting to remove them through the bronchus. Most of these tumors have a large extra bronchial component and any attempt at bronchoscopic removal of necessity is incomplete. Such tumors rather infrequently metastasize distantly, but local invasion along the bronchus and metastases into the regional lymph nodes can occur (Anderson, Steiner). These tumors are entirely different from the usual carcinoma of the lung, and should be separated when one is talking about results of treatment. The tumors grow slowly, and usually arise in bronchi at least one cm. in diameter. This tumor is covered with intact mucosa, and if you bite off a bit of that mucosa through a bronchoscope it will quickly heal over. It will also bleed vigorously because such tumors are very heavily vascularized (Goldman). These tumors have an entirely different microscopic appearance than the usual carcinoma. They often have an organoid appearance and superficially resemble a carcinoid tumor. Individual cells have uniform small nuclei, and mitotic figures are rare. These neoplasms, however, make up only a relatively small proportion of all carcinomas of the lung (perhaps five per cent); but they do make up a fairly high proportion of the resectable and curable lung tumors (perhaps 25 per cent).

The peripheral bronchiogenic carcinomas are difficult to diagnose. If a tumor begins in a large



Figure 3—Pneumonectomy specimen demonstrating well delineated apparently intra-luminal so-called bronchial adenoma covered with intact epithelium.



Figure 4—This represents same specimen as Figure 3 cut to demonstrate the large extra-bronchial component with destruction of cartilage and invasion of lung parenchyma.

bronchus, the clinical signs are due to partial or complete obstruction of that bronchus. When a tumor appears in the periphery, the patient may have no symptoms. This is the type of case which is go-

ing to be picked up by these routine mass surveys which are being done primarily for tuberculosis. We are seeing more and more round shadows in the lung, and I can tell you that their diagnosis by looking at

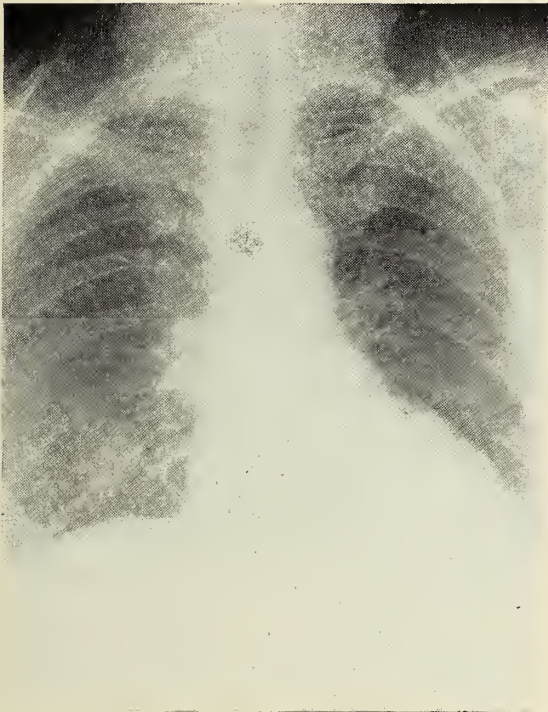


Figure 5—Round shadow right lower lung field. This was a benign tumor, a hemangioma.

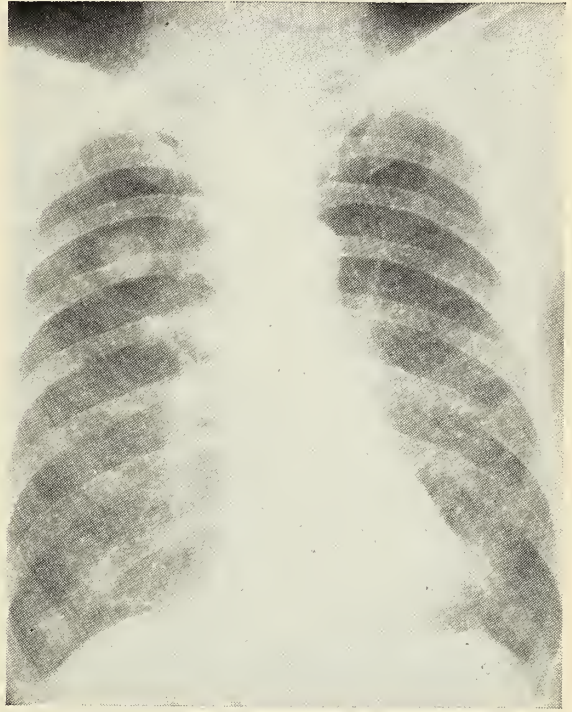


Figure 7—Round shadow, right upper lung field. Patient had no symptoms. This was a primary bronchiogenic carcinoma.

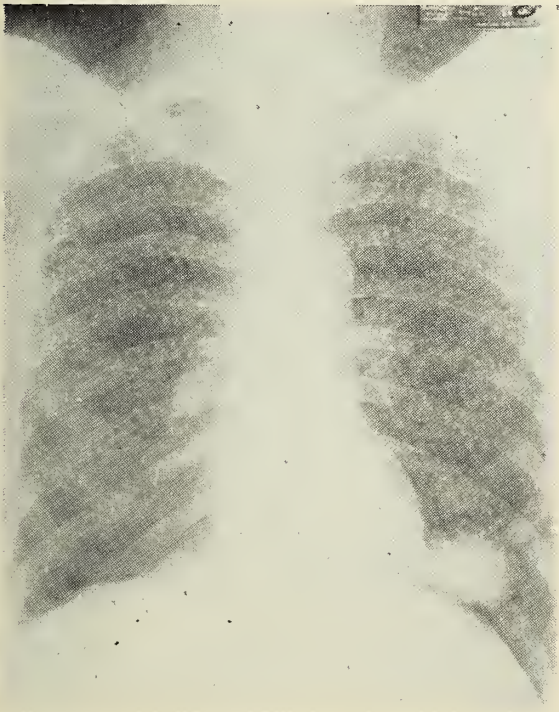


Figure 6—Round shadow, left lower lung field, containing small punctuate areas of calcification. This was a tuberculoma.

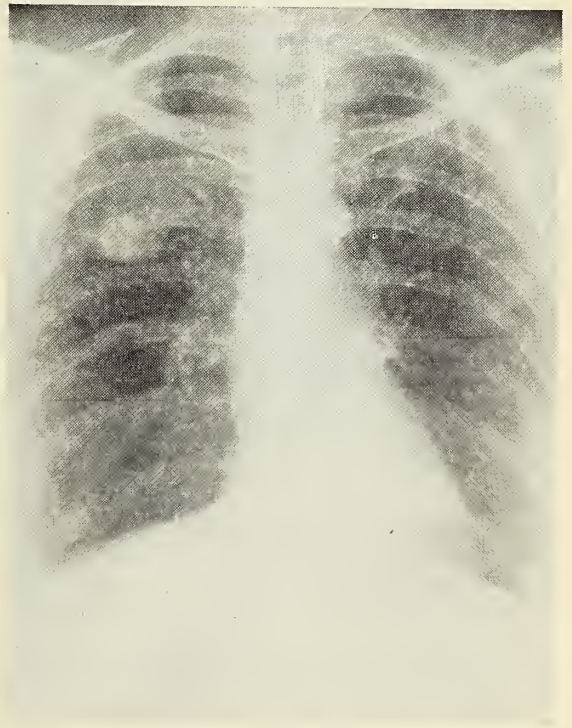


Figure 8—Round shadow, right upper lung field. Patient had partial obstruction of the esophagus due to a lye stricture. This round shadow was due to lipoid pneumonia.

the film is usually very difficult, if not impossible. Round shadows in the periphery may be caused by localized lipoid pneumonia, a tuberculoma, a metastatic neoplasm, a primary benign or malignant neoplasm. Often even with a complete clinical history, radiographs, laminography, sputa and bronchoscopy, the diagnosis remains in doubt. At times, with lipoid pneumonia there may be a history of ingestion of lipid. The tuberculoma may contain punctate calcification. The metastatic neoplasm may give a history of removal of a primary tumor of the rectum, uterus or a soft tissue sarcoma several years before (Alexander). Such findings are suggestive but not diagnostic. Bronchoscopy will not be of value. In some instances, looking at the sputa or bronchial washings will make the diagnosis.

Our procedure on such cases, if we cannot make a positive diagnosis of cancer from the sputa or rarely from aspiration biopsy, is to explore such a lesion, resect the lesion locally and then look at it grossly, do a frozen section and proceed accordingly—if it is malignant, doing a pneumonectomy; if it is benign, being content with a local resection.

The pathologist can be helpful to the clinician in making a diagnosis of carcinoma of the lung. If you make the diagnosis by the history and physical examination, it will usually not be a positive diagnosis unless the patient has advanced inoperable disease. Bronchoscopic specimens are best blocked



Figure 10a—Tomogram of a peripherally placed shadow, left upper lung field, with central cavitation. This finding was picked up on routine chest survey.



Figure 9—Round shadow, left lower lung field and rounded shadow close to the hilum left upper lung field. These two shadows proved to be due to metastatic leiomyosarcoma. Hysterectomy had been done four years previously for leiomyosarcoma.

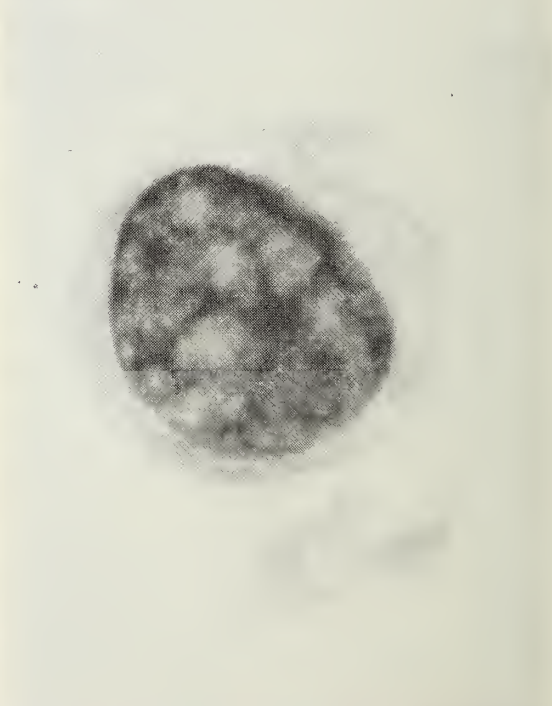


Figure 10b—Large cell found in the sputum with a very prominent nucleus and prominent nucleoli. This was interpreted as a carcinoma cell.

in their entirety and then cut at various levels through the block, and sometimes you will be able to make the diagnosis from one slide and not from any of the others. When you biopsy a tumor and it is an extremely undifferentiated tumor, then probably the chances are much greater that such a tumor has metastasized. However, if the tumor is biopsied and is quite well differentiated on its surface, it may very well be poorly differentiated in deeper areas. The percentage of positive bronchoscopic biopsies on any group of bronchiogenic carcinomas will decrease with increasing percentages of resectability. Exploratory thoracotomy with frozen section is often resorted to in order to make a definitive diagnosis. We do not use needle biopsy except in those instances where the patient has a tumor fairly near the pleura or has the so-called superior pulmonary sulcus tumor, in which an aspiration of the tumor can be made and sections can be done in the same way that you prepare ordinary sections (Meatheringham and Ackerman).

The cytologic diagnosis of carcinoma is a valuable laboratory procedure in the diagnosis of carcinoma of the lung. This method finds its best adjunctive use in those cases where the clinical signs and the symptoms suggest that a malignant neoplasm may be there, but in which a definitive biopsy cannot be obtained. It finds its least use as a screening procedure because it is extremely expensive, time consuming and requires considerable skill. In order for

us to do sputa examinations, we trained a very good cytologist, Mrs. William Jackson, who had had a background in zoology. We also trained a pathologist, Dr. Ferruccio Bertoli, and both of those individuals have now worked together for over a year. We obtain three good specimens of sputa and/or bronchial washings, make several slides, then the cytologist, Mrs. Jackson, looks very carefully at all of those slides. She may spend all day long looking at four or five cases. If she finds areas which she believes are suspicious, she shows them to Dr. Bertoli. If he believes that the cells found suggest cancer, he shows them to me. I should emphasize that when we say that we find no evidence of carcinoma in the sputa that it certainly does not mean that carcinoma is not present. In any given group of lung carcinomas, the error in that regard probably is somewhere in the neighborhood of between 15 and 35 per cent, and that error will depend upon the type of case, the way the sputa is collected and the skill of the examiner. False positives should occur rarely. We have had only one instance, a case of lipid pneumonia.

In lipid pneumonia, unresolved pneumonia, bronchiectasis, chronic tuberculosis and other conditions in which squamous metaplasia may occur, bizarre cells may appear in the sputa which are extremely misleading. If you talk to cytologists with considerable experience in this area of investigation, they will all admit to you that they did have one case or two cases or even three cases in which they thought the sputa contained cancer cells but it did not. I think, therefore, that this method should receive its proper place in the diagnosis of cancer and should not be pushed on a higher plane than it deserves. We should look at the method carefully and judiciously and when it is added to the weight of evidence that has been submitted that the patient has carcinoma



Figure 10c—Gross specimen to demonstrate small carcinoma, left upper lobe. There were no lymph node metastases.

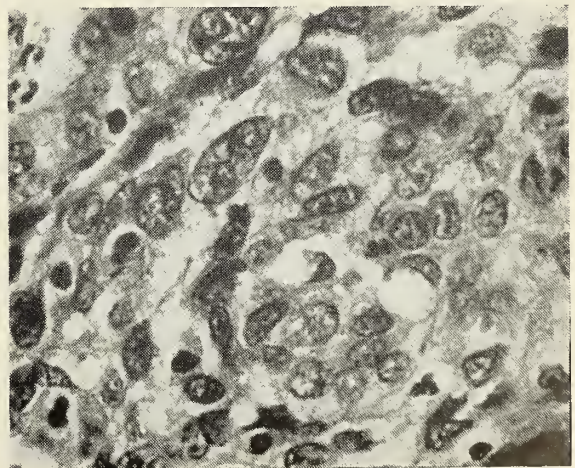


Figure 10d—Photomicrograph of the neoplasm. Note similarity of tumor cells to cell found in the sputum.

of the lung, we should merely drop it on the scale and have it take its proper weight. We shouldn't let it overbalance our judgment in the suggestion that a lung be removed.

The first patient who had his lung successfully resected by Graham is still alive, and this fact is eloquent evidence that bronchiogenic carcinoma is a curable disease. Careful attention to minimal signs of bronchial obstruction and increasing awareness that a peripheral round shadow in a chest roentgenogram may be a bronchiogenic carcinoma will lead to early thoracotomy, and therefore resection and cure in a fair percentage of instances.

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Tumors of the Ovary

Herbert E. Schmitz, M. D.

Chicago, Illinois

When given this subject of ovarian tumors, I became immensely interested because of the great pathological variation of tumors occurring in the ovary; on the other hand, I became hesitant because the thought immediately came to me that you can do so little about them. Fortunately they are tumors which do not occur too frequently in gynecology, but still we must discuss our weaknesses as well as our accomplishments.

In order to better understand the clinical approach to tumors of the ovary, it is necessary for us to have an understanding of the embryology of the ovary, and to recall that almost the entire reproductive and urinary system arises from the wolffian body and that this wolffian body lies in the posterior and dorsal position of the primitive peritoneal cavity. At a very early state in the development of the embryo there is an anlage of the so-called sex cells from which arise the sex glands. At one stage of the undifferentiation, it is impossible to tell whether this is going to be a male or a female gland. In the development there are some of the male vestiges that remain in the rete-ovarum which later may give rise to the masculinizing tumors which we refer to as the arrhenoblastomas. Also from these medullary columns of cells, which develop into the primordial follicles, we have vestiges of granulosa material that remain in the medulla of the ovary and oftentimes in later life give rise to the so-called feminizing or granulosa cell tumors. Because we have these cellular arrests and we have connective tissue, epithelium and germinal epithelium and many other elements within the ovary, we have these unusual and bizarre tumors with which to contend.

Rather than go into the microscopic aspect of these tumors, I have chosen to consider them clinically, because I feel that whatever success we are going to obtain in the future is going to come from an early recognition of these tumors by a working classification which will be the basis for our selection of treatment. We have adopted in our clinic the classification of Novak. We agree with Novak that it is not the ideal; there are many fallacies, and if we want to base our classification on an embryologic or a microscopic study, this is not going to be accurate. On the other hand, if we base our classification entirely on the microscopic picture or the developmental study of the ovary, we are not going to have a successful clinical working division.

We divide tumors of the ovary, of course, into the cystic tumors and the solid tumors. Then we immediately divide these cystic and solid tumors into the benign and the malignant. The most common cystic tumors of the ovary are the benign follicle cysts and the luteum cysts which rarely attain a size larger than that of a lemon and require very little attention once they have been correctly diagnosed. Also we find frequently the germinal inclusion cysts and the endometrial cysts of the ovary which are, as a rule, in association with pelvic endometriosis. The neoplastic cysts of the ovary are the cystadenomas; the pseudomucinous, which are of the simple or the papillary variety, the serous cystadenomas, also of the simple or the papillary variety, and the dermoids, the benign form of the later teratomas. The solid tumors of the ovary include the papillomas, the fibroadenomas, the fibromas, the fibromyomas, the angiomas, lymphangiomas, chondromas, and osteomas. These are rare

tumors, but they are present because of the embryologic tissues which I mentioned a moment ago.

Of the malignant tumors of the ovary, the most common are the carcinomas. Variations of the primary solid carcinomas embody the adenocarcinomas, the medullary carcinomas, the carcinoma simplex, scirrhous carcinoma, alveolar carcinoma, and plexiform, or mesonephroma. The embryonic tumors include the granulosa cell tumors, the thecomas, the luteomas, the arrhenoblastomas, and the dysgerminomas, all arising in these tissues which are arrested, as I mentioned, in the male tubular elements of the rete-ovarum, while the granulosa cells are arrested mostly in the medullary portion. The cystic carcinomas are most frequently the pseudomucinous cystadenocarcinoma and the scirrhous cell papillary cystadenocarcinoma. We must never forget the metastatic tumors (the adenocarcinomas simple, the Krukenburg tumors, the epidermoid carcinomas, the hypernephromas), the teratomas, the sarcomas, and the melanomas. Fortunately benign tumors of the ovary are the most frequent. They occur in our series in about 72.4 per cent of cases with malignant tumors in the remaining group. Comparing this with the literature we find, as a whole, 72.4 per cent to 79 per cent of the tumors of the ovary are benign and from 27.4 to 20.8 per cent of the cases are malignant.

Pemberton has accumulated a large number of ovarian tumors at the Free Hospital of Boston and has divided them according to their prevalence. He found that the pseudomucinous cystadenomas benign occurred in 21.4 per cent of this group of some 700 cases, while the pseudomucinous cystadenomas malignant occurred in 3.6 per cent; the serous cystadenoma benign occurred in 16.1 per cent while the serous cystadenoma malignant occurred in 17.3 per cent—very little difference between the benign cystadenomas and the malignant. The fibromas occurred in 10.3, sarcomas in 2.4 per cent, dermoids in 24.6 per cent, granulosa cell tumors in 2.9 per cent, Brenner's tumor in 0.9 per cent and the other rarer tumors in such small percentage that they demand very little consideration clinically.

When we are confronted with the clinical findings of a cystic swelling of the ovary, we must immediately classify that tumor, if possible, so that we can proceed with the selection of correct treatment. The follicle cysts, as I mentioned, rarely exceed the size of a lemon. They are not infrequently hemorrhagic because of hemorrhage occurring within the cyst cavity, and when this takes place there may be pain and discomfort. Otherwise they are usually symptomless. There being no characteristic symptoms, the only way we can discover these tumors is

by routine examination. When found on routine examinations they should be watched. Tumors less than the size of a lemon that are symptomless, and which are probably follicular or luteum cysts, certainly demand no surgical intervention. If, however, under close supervision, they are found to enlarge, to show growth activity, then most definitely do they demand surgical intervention.

The pseudomucinous and the serous cysts usually attract attention because of their size, and the size makes the fact evident to the patient that she has a tumor within the peritoneal cavity. These patients usually present themselves with the finding of an abdominal mass. Such rapidly growing tumors may cause the destruction of the uterus because of the destruction of the ovarian tissue, hemorrhage, irregular bleeding or a marked hypomenorrhea. If they have a severe destructive effect on the ovary, producing an associated hyperemia, the patient may have a menorrhagia. The patient complains of heaviness, pressure and enlargement of the abdomen. Its size and consistency immediately take it out of the realm of the simple cysts, which are thin walled, fluctuant, and easily manipulated, into the more doughy typical pseudomucinous or serous variety. These cysts may attain tremendous size. They have been reported as weighing as much as 378 pounds, although nowadays it is unusual to find them attaining a size larger than that of a fetal head because as soon as there is recognition by the patient she presents herself for care.

The complications which arise in these serous and pseudomucinous cysts, as they do in all cysts, are torsion of the pedicle, adhesions to the peritoneum, irritation causing local peritoneal response, with pain, leukocytosis and discomfort. Tumors of this size must of course be differentiated from pregnancy, tuberculous peritonitis, ascites, and myomata of the uterus. Frequently these tumors are so intact within the true pelvis that the uterus is pushed out

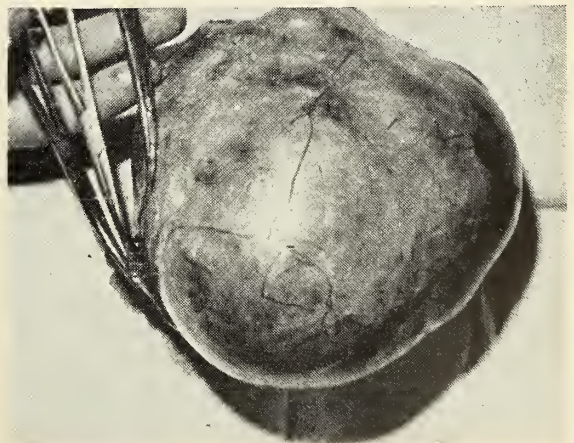


Figure 1. Serous cystadenoma.

of the pelvis and cannot be separately palpated. The tension of the pseudomucinous or serous cyst causes the feeling of density to be increased, and the mistaken diagnosis of myoma or uterine tumor may be made. It is always wise to differentiate by an exposure of the cervix and a probing in ascertaining the exact position of the uterus, the depth of the cavity, and, if necessary, by the injection of iodized oil and cystosalpingraphy.

The treatment of these tumors, of course, is surgical, because there is no way clinically of diagnosing the malignant from the benign. Surgical intervention should be immediate. At the time of removal of the tumor it should be examined both clinically and microscopically with a frozen section diagnosis. If frozen section diagnosis is not available, and there are papillary excrescences on the inner surface of these cavities of the ovarian tumor, we most certainly must be radical. We cannot be conservative in a situation without more definite evidence, and it is better to err on the side of radicalism than on conservatism. When the tumors prove to be malignant complete surgery with removal of the uterus, the Fallopian tubes and the opposite ovary is indicated, because it is well known that malignancies of the ovary extend very rapidly into the uterus and to the opposite ovary. When I discuss the treatment of carcinomas of the ovary, further surgical procedures will be considered.

The solid tumors of the ovary are our most distressing group as far as end results are concerned. This is due to the fact that they are diagnosed late and that surgical procedures are often inadequate. We must remember always that carcinoma of the ovary is bilateral in 50.9 per cent, even though it may not be clinically evident. If we find a hard firm mass in the region of the ovary with some cystic degeneration occasionally within that hard mass (as occurs in certain of these tumors), there should be no hesitation to institute surgical proced-

ures. A benign fibroma, or one of the other benign tumors, fibromyomas, myomas, etc., is far better removed, because of the chance of associated accident, torsion, interference with blood supply, etc., than to leave it behind and err again in having the malignant tumor misdiagnosed as a benign one. When a solid tumor of the ovary is diagnosed, the treatment is immediate surgery.

The prognosis in solid tumors of the ovary is poor. The five-year survival rate is approximately 15 per cent. Meigs in his group found 9.7 per cent survival in the solid tumors of the ovary, while in the cystic group he had a survival rate of 21.9 per cent.

The treatment of ovarian carcinoma is definitely surgical. If the tumor is fixed, is adherent to the peritoneum, or is adherent to the structures within the pelvis, preoperative irradiation often frees the tumor by causing the associated inflammatory reactions to subside, and when the tumor again becomes movable complete removal is indicated. We must realize, however, that when we are irradiating a tumor of the ovary of any size, or a tumor containing serous or mucinous material, we are deflecting the beam of irradiation and we are not obtaining, within the center portion of that tumor, the irradiation effect that we desire. Frequently you will see tumors that have been irradiated and regressed; then, within a very short period of time, they resume their activity and their growth. Therefore, if there is regression, and surgical intervention becomes feasible, that is the time when it should be instituted. We feel that even incomplete removal of an ovarian carcinoma is desirable because of the fact that obstruction is avoided and the remnants are more likely to be destroyed (or at least their growth temporarily arrested), by irradiation than if you are irradiating the entire tumor.

As to the extent of surgery, I believe one of the

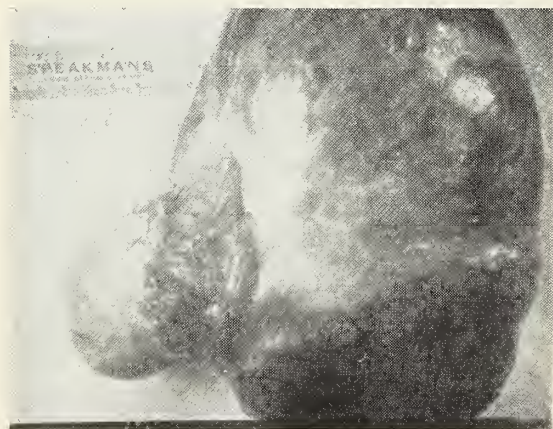


Figure 2. Papillary serous cystadenocarcinoma.



Figure 3. Bilateral malignant granulosa cell carcinoma.

reasons that we have such poor recovery rates in carcinoma of the ovary is inadequate treatment by the first individual to see that tumor; procrastination after the tumor has been found, or as happens so frequently, unilateral oophorectomy because the true malignant character of the tumor is not recognized; and then a hesitancy to go back later in that same patient and do an adequate procedure, thus procrastination again. Irradiation is instituted with the hope that further surgical procedure will be avoided by its use. This can be seen if you break down the group of cases and compare those which have had proper primary treatment with those that have been inadequately treated and come for secondary treatment.

There should never be a surgical attempt on any tumor of the ovary unless there are facilities for immediate microscopic or pathologic diagnosis. Many of these solid tumors may be erroneously diagnosed as benign and without the true microscopic picture the proper treatment cannot be carried out. We find these very unusual solid, undifferentiated tumors in the young, 16 years of age with some either younger or older. We hesitate to do radical, thorough surgery, so a conservative operative procedure is carried out. If there is an immediate diagnosis and the surgery is complete and thorough, the survival rate naturally will be much higher. If the diagnosis of malignancy is made, even though the tumor is freely movable, not attached to the peritoneum or to other viscera, and no palpable lymph nodes are within the pelvis, one should still perform a complete removal of the uterus, the cervix and the opposite adnexa. I am of the opinion now that even a more thorough glandular dissection of the lymphatics within the true pelvis is indicated; and always a removal of the entire omentum, because of the high recurrence of these tumors within the omentum where it has, in all probability, only come in contact with the tumor, and the high per-

centage of local recurrent masses in patients who have had complete removal of the uterus, tubes, and ovaries. These things can possibly be avoided by a more radical attitude in the choice of our surgical procedures.

The question of post-operative irradiation is a debatable one. There are some of these tumors that are embryonic and of necessity radiosensitive. I am one who is of the opinion that if we do not accomplish anything with irradiation, we certainly do not in any way injure that individual, even though we may have inconvenienced her. Irradiation properly administered should cause a low percentage of bladder and bowel complications, and because of the fact that some of these tumors are radiosensitive, the patient should be given the benefit of thorough external irradiation post-operatively.

I do not feel that we can leave this question of ovarian tumors without at least mentioning a rare tumor, which is frequently misdiagnosed as ovarian in origin, and which again gives poor end results because of the fact that the true tumor is not recognized and the treatment is inadequate. I mean carcinoma of the Fallopian tubes. These are mostly rapidly growing highly malignant adenocarcinomas. Outside of the serosanguinous discharge, which is frequently present in the patient, there are no other symptoms in the early stages. The mass is found lateral to the uterus, or adherent to it, so the diagnosis is frequently that of a benign salpingitis, hydrosalpinx, hematosalpinx, etc., or an ovarian tumor. The diagnosis of this rare tumor is usually made by the pathologist, because the adnexal mass is removed. The tube is not open so the proliferation of the adenocarcinoma cannot be visualized and, therefore, the treatment is not thorough. Carcinomas of the Fallopian tube are rare. They occur in about 0.2 to 0.5 per cent of gynecological malignancies. They are reported by Livingston but 465 times in the literature, but the survival rate is extremely low. This can be corrected by recognizing

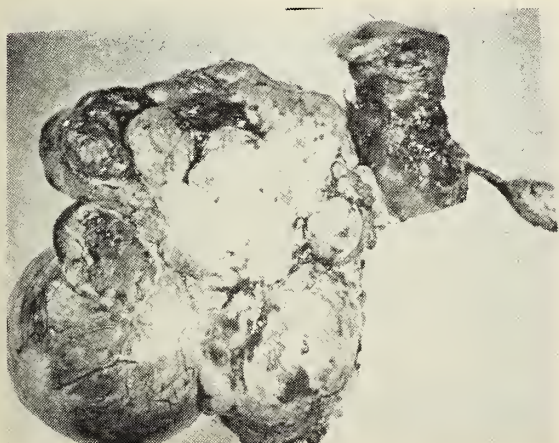


Figure 4. Dermoid and serous cyst ovary.



Figure 5. Fibroma (ovary cut in two).

that such tumors do exist and making an attempt at the time of surgery to arrive at the correct pathological diagnosis. There are too many specimens removed from the pelvis that are not sectioned or examined grossly at the time of the operative procedure.

Let me summarize these few remarks by saying that these carcinomas or malignant tumors of the ovary fortunately are rare; that good end results are rare—about 15 per cent surviving the five-year period; that I am of the opinion that the poor end results are due to inadequate diagnostic procedures, the patient presenting herself late in the disease, and the primary treatment frequently being inadequate.

There are homely axioms that can help us to remember certain things. I think the institution of

the detection center—every doctor's office should be a detection center—is going to correct these poor end results. I think there are going to be earlier discoveries of tumors of the ovary and the pelvis. In order to remember that every woman presenting herself must have a pelvic examination, I like to say, "Greet all of your female patients with a pelvic handshake!" It carries a lot with it. It is surprising how high an incidence of pathology is discovered on routine pelvic examination. We should remember clinically that although the benign tumors of the ovary comprise about 73 per cent, the other 27 per cent are extremely dangerous. We must find them early, we must attack them completely, and the most successful treatment to date is radical, thorough surgery, possibly followed by external irradiation therapy.

Experimental Approach To Cancer Chemotherapy

Morris Belkin, Ph. D.

Bethesda, Maryland

I should like to present to you this afternoon some of the problems and findings of experimental cancer chemotherapy, to indicate the procedures which have been developed and the progress that has been made, and to do so from the standpoint of the research laboratory. In this way I hope to indicate the relationship and value of a cancer research laboratory to the cancer research clinic.

Historically, cancer chemotherapy has been in bad repute for many decades. It is a field which has been a favorite grazing ground for quacks, crack-pots and cranks of every stripe. Their fantastic claims could only be doomed to failure, with the result that for a long time the malodorous reputation of chemotherapy, though not deserved, frightened away careful, orthodox investigators from working with such problems. Also, the many and repeated failures of the early workers contrasting with the brilliant successes in the chemotherapy of many other diseases, led to a feeling of unjustified pessimism.

Recently, however, it has become quite respectable and even fashionable to engage in problems of chemotherapy of cancer, and the last two decades have seen a great increase in activity in this field.

One reason was the development of the proper laboratory tools for this type of work. The breeding of genetically inbred strains of mice, the discovery, the isolation in pure form, and the synthesis of chemical carcinogens, the increased availability of tumors, transplantable, induced, or spontaneous in

origin, and the growing coordination of laboratory and clinical research, have all contributed to give this field a new impetus and direction. Work in cancer chemotherapy is currently going on in a number of institutions. This talk presents but one illustration of such investigation.

At the National Cancer Institute a program of cancer chemotherapy has been under way for the past five years, and I should like first to present and discuss the methods used, some of the difficulties encountered and some of the pertinent findings to date. I want also to say that this is a report of the activities of a large number of people trained in many different disciplines, who have been working together in the Chemotherapy Section at the Cancer Institute.*

The ultimate objective of our group is to develop chemical agents which either by themselves or in combination with surgery and radiation, will control tumor growth without causing severe and irreparable damage to normal tissue. Since there are countless chemicals available or possible of synthesis, a screening procedure was designed to pick out for further study a small number with demonstrable potency in damaging tumors in experimental animals. The several steps in the screening procedure follow:

*The following personnel in the Chemotherapy Section, National Cancer Institute, have been largely responsible for the investigation reported in this paper: Dr. J. L. Hartwell and Dr. D. L. Vivian, organic chemistry; Dr. J. Leiter and Mr. A. Perrault, toxicity and screening; Dr. R. C. MacCardle and Dr. V. Downing, cytology. Dr. M. J. Shear, Chief, initiated and directed this program.

After the appropriate vehicle for each substance to be tested has been selected, the maximum tolerated dose (M.T.D.) for a single subcutaneous injection is then determined. Values for LD₅₀ (the dose necessary to kill 50 per cent of a group of mice) are also ascertained. These dose values are first secured for normal mice, and then repeated for tumor-bearing mice since it has been found that mice with tumors often will not tolerate as much administered compound as do normal mice.

The tumor employed is sarcoma 37 implanted in the muscle of the hind leg of strain CAF₁ mice. Using the preliminary toxicity data as a guide, a dose of the test substance is selected (near the M.T.D.) which is administered in the flank contralateral to the tumor in a single subcutaneous injection to 15 mice, bearing six-day implants. Fifteen mice bearing similar tumor implants serve as controls.

At eight, 24 and 48 hours, five treated mice plus five controls are sacrificed; observations are recorded on the gross appearance of the tumor and a slice of tissue fixed for subsequent histologic study.

Employing this procedure, which is essentially a simple method of selection, there have been screened so far over 1000 compounds. As expected, the great majority of these compounds showed no necrotizing action on our test tumor under our experimental conditions. Over 60 compounds, however, produced definite tumor damage following a single dose near the lethal.

These positive compounds fall into a number of major chemical categories, as follows:

1. Colchicine and derivatives
2. Diphenylethylamines
3. Acridines
4. Quinones
5. Quaternary ammonium compounds
6. Trivalent organic arsenicals
7. Podophyllotoxin and related compounds

One of the consistent findings and difficulties is the toxicity of the doses which produce a tumor

necrotizing effect. As with x-rays, the margin by which malignant cells are more sensitive than are the normal host cells to the chemicals studied thus far appears to be relatively small. For this reason, studying the possibilities of a variety of categories of chemical compounds has its advantage, among others, in that different compounds may strike at the tumor cell in different ways and hence possibly permit the use of a combination of agents to bring about a more powerful damaging action by exerting their effect through multiple pathways of cellular metabolism.

The results of our screening program have been to us encouraging. Five years ago we would not have expected that the screening of 1,000 chemicals would yield 60-odd compounds which had a definite effect, even at a near lethal dose, on a mouse sarcoma.

It should be pointed out that the 900 or more chemicals which we call negative are only so against our test tumor under the conditions of our screening operation with a single injection. Were we able to test each compound against a variety of tumors in a variety of animals and with repeated injections, the score might well be different. To do that, however, involves increasing the number of mice, staff, and space—problems in laboratory logistics which could not be accomplished.

From now on our program is to concentrate largely on the compounds found positive by our screening method. They will be given a thorough pharmacologic and toxicologic workup and, in addition, certain compounds are being tried against tumors other than Sarcoma 37 in order to obtain a more complete spectrum of their behavior. In the process most of them will probably be found unsuitable for human use, but we are encouraged to do further work and we hope that at least one or two will be of sufficiently high activity and sufficiently low toxicity so that the clinician would be justified in employing them for study in human patients with incurable cancer.



Carcinoma Of The Pancreas

Walter L. Palmer, M.D.

Chicago, Illinois

Carcinoma of the pancreas is a disease of considerable frequency, constituting two to three per cent of all cancer deaths. It is a disease for which there is no one specific pathognomonic sign, but on the other hand can be diagnosed without too much difficulty if one appreciates the clinical picture and if one bears it in mind. Someone has remarked that the frequency of the correct diagnosis of carcinoma of the pancreas is a good index of the astuteness of the clinician. The most important thing, I think, that the clinician needs to do is to keep the disease in mind. The question may be raised, of course, about why one should be so particular about trying to diagnose carcinoma of the pancreas if nothing can be done about it, and for that reason Dr. Brunschwig will spend part of the time assigned to me in discussing the surgical treatment.

The outstanding symptoms are pain and jaundice. Pain is even a more constant symptom than jaundice. It is usually epigastric, it tends to radiate through to the back, it may radiate more to the left than to the right, it may radiate around the costal margin. It may begin in the back and radiate through to the front; occasionally it is a generalized abdominal pain, occasionally it is referred to the lower abdomen rather than to the epigastrium. This pain, as the days and weeks go by, tends to be something of a neuralgic type of pain; it is persistent; it is not relieved by food nor by defecation. Sometimes it is relieved by changes in posture, but ordinarily not very much. It is a pain which may vary a good deal in severity from time to time but tends to be there—nagging or very severe. Sometimes it keeps the patient awake at night. In a few instances aspirin has afforded striking relief. Aspirin relieves a great many pains but when one finds an epigastric pain for which the patient takes aspirin, one should think very carefully about carcinoma of the pancreas.

Now with regard to the incidence of jaundice: in approximately two-thirds of our patients and two-thirds of the patients reported by other authors, jaundice occurred at some time. It is rather important to bear in mind that one-third of the patients with carcinoma of the pancreas will die without jaundice having been present. Sometimes jaundice is the initial symptom, but ordinarily we shouldn't wait until jaundice appears before we make the diagnosis.

Loss of weight is an important symptom. It was present in 72 of our 90 patients. It is ordinarily accompanied, of course, by loss of appetite, but not

necessarily by profound anorexia, although that did occur in over half of our patients. Constipation was described in 29, but of course so many patients complain of constipation no matter what the disease that that isn't of much consequence. Nausea and vomiting occurred in 24.

I would like to emphasize diarrhea. There are a small number of patients who have carcinoma of the body of the pancreas who have a combination of pain, often lower abdominal pain, and diarrhea. That makes a rather puzzling syndrome—no jaundice, lower abdominal pain and diarrhea, and yet the diagnosis is carcinoma of the pancreas. It is a most difficult group to diagnose because one has to differentiate retroperitoneal tumors of other types such as lymphoblastomas and sarcomas, idiopathic steatorrhea, and similar disorders.

The traditional rule is that in addition to the two symptoms of pain and jaundice, one should have a palpable gall bladder. In about 50 per cent of the patients described in the literature the gall bladder was palpable; in our series it was palpable in only 39 per cent. So, again, if we wait for a palpable gall bladder to appear, we miss a great many patients. A palpable epigastric mass is present in only about one-third of the patients. So, again, we can hardly wait for an epigastric mass.

There are two other things that can be done in addition to these classical procedures that sometimes are quite helpful. One is to check the carbohydrate metabolism of the patient and the other is to x-ray. With regard to the carbohydrate metabolism, I've been surprised at the number of patients with carcinoma of the pancreas who do have some sugar in the urine. Marble has called attention to the rather high incidence of carcinoma of the pancreas in diabetics. It may be that some of these patients have diabetes of carcinomatous origin. About a year ago I learned a very bitter lesson of this sort. A patient came in with a loss of about 70 pounds in weight, glycosuria and a marked elevation of the blood sugar—the typical picture of diabetes mellitus. Without giving adequate consideration to the abdominal distress which seemed to constitute a minor complaint, the patient was transferred to the metabolic service. The diabetes was soon brought under control and the patient was discharged from the hospital. Within a few months he returned with jaundice, a palpable epigastric mass, and palpable gall bladder; to make a long story short—he did have a carcinoma of the pancreas from which he died.

Berk found that about 24 per cent of his cases had glycosuria; our own figure is 27 per cent. We were then led to check the glucose tolerance curve, finding that it was abnormal in a surprising percentage. Berk found it to be impaired in 78 per cent, another author in 100 per cent; our own figure was 80 per cent.

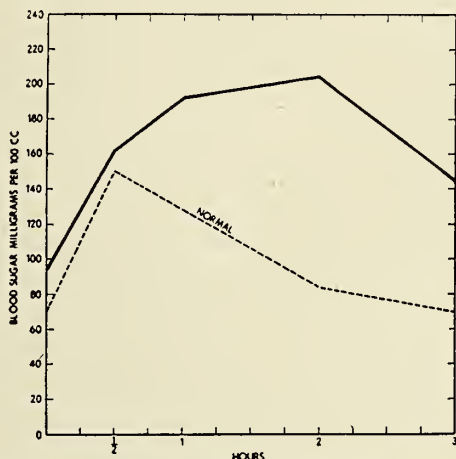


Fig. 1.—Composite dextrose tolerance curve of 21 patients

Figure 1 is a composite dextrose tolerance curve of 21 patients. The diabetic tendency of the curve is evident.

We were also surprised to see in reviewing our cases how many of them had had some type of an abnormality disclosed by x-ray.

The second portion of the duodenum may be dis-

placed by tumor or it may be invaded. The infiltrated duodenum may undergo ulceration; massive hemorrhage may result. The process may simulate duodenal ulcer. In other instances obstruction may occur, usually in the second portion of the duodenum. The classical roentgenologic sign is enlargement of the duodenal loop due to displacement by tumor. In some instances the mass presents above the lesser curvature of the stomach, pushing the stomach down.

This discussion of the symptoms and the diagnosis of carcinoma of the pancreas may be summarized by saying that the important symptoms are pain, dull and steady as a rule, located in the abdomen, radiating to the back or not, sometimes radiating to the lower abdomen, accompanied usually by severe weight loss, loss of appetite, and occasionally by persistent diarrhea. The important signs, when present, are jaundice, palpable gall bladder, and an epigastric mass. The helpful laboratory findings are glycosuria, an elevated dextrose tolerance curve, and roentgenologic abnormalities of the stomach and duodenum.

May I conclude by again emphasizing the fact that probably the most important thing in the diagnosis of this condition is to keep the disease in mind, and that if one does keep it in mind, the clinical picture is so definite that there will be very little difficulty in diagnosis.

Now, with your permission, Mr. Chairman, I'm going to ask Dr. Brunswick to continue with the discussion of the surgical therapy of carcinoma of the pancreas.

Surgical Therapy of Carcinoma of the Pancreas

Alexander Brunswick, M.D.

New York, New York

There have been a good many questions raised about the techniques of surgery of the pancreas. There cannot be much said now which has not been said a number of times before in the literature and at previous meetings.

The principle of the resection of the head of the pancreas is well established. The statement has recently been made that cancers of the head of the pancreas have such a poor prognosis that one can seriously raise the question as to whether or not a short-circuiting operation might provide just as much longevity and comfort as the pancreatoduodenectomy which carries a high mortality. But the experience in attacking carcinoma of the head of the pancreas is not in vain because the same technique is applied to attacking carcinoma of the

papilla of Vater or the ampullary region, or carcinoma of the lower centimeter or two of the common bile duct—all forms of cancer which, it would seem, afford a better survival following the radical operation.

I don't think that there is any question but that cancer of the papilla of Vater, if radically resected, offers a better prognosis than cancer of the head of the pancreas, and yet I do not think that we should subscribe to the principle that the radical operation should no longer be attempted in cancer of the head of the pancreas. Now there are perhaps 125 and there shortly will be over 200 cases of carcinoma of the head of the pancreas and ampullary regions treated by pancreatoduodenectomy recorded in the literature.

I think that the number of five-year survivals following radical pancreatoduodenectomy for cancer of the head of the pancreas or for ampullary cancer is indeed very few at the present time. Personally I know of three patients who have survived beyond the conventional five-year limit. Two of these are carcinomas of the papilla of Vater, and one of the head of the pancreas.

The question as to the best technique is hard to describe without a blackboard. The method that we now follow is essentially the technique that we described originally (1937), first an incision along the greater curvature of the duodenum to mobilize the head of the pancreas and thorough palpation of it between the thumb and the index finger to determine whether or not the superior mesenteric and the first portion of the portal vein are compromised. If they are not, then the stomach is transected low, near the pylorus, the superior pancreaticoduodenal artery identified, ligated and transected and the lower portion of the dilated common duct transected. Then the duodenojejunal junction is mobilized by transection of the ligament of Treitz. Everything is then freed except the neck of the pancreas and this is transected at the level of the superior mesenteric vein. In reconstituting the upper alimentary tract, a gastrojejunostomy is performed and a choledochojejunostomy performed further down the jejunum with an enteroenterostomy between the afferent and efferent loops to the choledochojejunostomy. Some have relatively recently advocated the re-implantation of the resected neck of the pancreas into the jejunal loop that goes up to the choledochojejunostomy.

There has been much discussion as those of you know who are particularly interested in this problem, concerning the methods of reconstituting the upper alimentary tract. The method I have followed does not include the implantation of the transected neck of the pancreas into the jejunum. Those who advocate its implantation do so because of the desire to return the pancreatic secretions to the jejunum and also to obviate the postoperative fistulae that

develop when the neck of the pancreas is simply ligated and not implanted.

There is one additional point in favor of implantation of the transected pancreas into bowel and that is that the juice coming from the transected duct may contain carcinoma cells. If that's true, then certainly a fistula pouring juice into the upper abdomen and containing carcinoma cells would be a very undesirable thing, so that to obviate the fistula and to prevent the spilling of juice that might contain cancer cells, implanting the stump would be desirable.

Another factor of importance is that in a number of cases we have transected the neck of the pancreas, grossly very wide of the tumor, and yet a careful histologic study of the head of the pancreas and of the transected neck showed that at the level of transection there were lymphatics filled with carcinoma cells, not appreciable macroscopically. I think that the very poor results as far as long survivals are concerned for head of the pancreas might well be due in a number of cases to the fact that cancer of the head of the pancreas even though grossly small might resemble carcinoma of the breast in that it permeates rapidly the lymphatics of the whole organ. That raises the question which is being very seriously thought about now of doing a total pancreatectomy for any carcinoma that is truly in the head of the pancreas, just as one would not think of doing a partial mastectomy for a carcinoma in any one corner of the breast but take out the whole breast. I think very serious thought should be given to doing total pancreatectomies or subtotal pancreatectomies for any carcinoma which has arisen well within the parenchyma of the organ (not carcinomas of the ampullary region).

I do not think for a moment that we should give up with cancer of the head of the pancreas simply because our experience to date which is over a relatively few years has not yielded a greater salvage than it has and that we should reserve pancreatoduodenectomy only for the carcinomas of the papilla of Vater, the ampulla of Vater, or the lower portion of the common bile duct.



Cancer Of The Colon

Nathan A. Womack, M.D.

Iowa City, Iowa

Cancer of the colon always has been a relatively frequent cancer; yet, its recognition as a neoplasm has been relatively recent in our development of medical knowledge. Through the years it was considered a fibrotic stenosis and not associated with similar types of neoplasms in other parts of the body. During the past 75 years, its true nature has come to be understood. Its surgical removal, however, was replete with tragedy, and the operative mortality in large bowel surgery was so great that it was a form of extirpation practiced by only the most courageous surgeons.

Much of this picture has been changed during the past 25 years. Today we see a patient with a carcinoma of the large bowel with a great deal of hope. We can promise a very respectable operative mortality. We can even cure the cancer in a high percentage of instances. This change has come about in several ways, it seems to me. One of the most important is the fact that we now see a patient on the operating table who generally is in good physical condition with no obstruction and who has a clean bowel. Such a man can withstand surgery with a much lower chance of morbidity. Therefore, the various methods which we now have of preparing the patient for an operation have played a most important part in lowering operative morbidity and mortality. The decompression of the bowel, the sterilization of the bowel, the nutrition of the patient, the electrolyte balance, blood replacement, adequate and safe anesthesia all are things which have played an important part. Again, a significant advance has been made in our knowledge of the characteristics of early cancer of the large bowel and in technics of early recognition. It is particularly in relation to this latter phase that I want to limit most of my discussion this afternoon.

The technics of preparation of a patient and the operative removal of the segment of bowel that is diseased now are fairly well standardized. While we can anticipate still greater improvement as the years go by, our main progress must come from the early recognition of the disease.

A cancer of the large bowel is going to present itself symptomatically by virtue of the fact that it is an ulcerating mass. If it ulcerates, it is going to bleed. If it ulcerates, it also is going to become infected. Because it is cancer, it is going to invade. Our symptomatology then will be the result of ulceration, infection, hemorrhage, and invasion. The

exact way in which these symptoms will present themselves to the patient will depend to a large part on that portion of the bowel in which the lesion exists. This situation has been oversimplified by the statement that tumors of the right side of the large bowel give anemia, diarrhea, weakness, and loss of weight; while tumors on the left side of the bowel produce obstruction. The statement frequently is true. Also, frequently it is not true.

Because the cecum and ascending colon have a much larger diameter than do the transverse, descending, and sigmoid portions of the colon, they can accommodate a much larger mass. Furthermore, the fecal stream on the right side of the large bowel is more or less of a liquid nature; and obstructive symptoms would not be expected to occur so early. An appreciation of this purely anatomical situation, therefore, has resulted in the overemphasis of what seems to be an apparent fact.

It is important in the appreciation of symptoms of the large bowel that we take into consideration the motility of the bowel as well as its anatomical structure, for it is in alteration of the motility that many symptoms are produced.

Strangely enough, much of the motility of the large bowel still is poorly understood. Enough information is apparent, however, to be of considerable importance in understanding the symptoms produced by alteration of motility by malignant disease.

The cecum and ascending colon, for instance, play a most unique part in water absorption. This perhaps is not due to any particular difference in structure of the mucosa or the muscularis but rather to its type of motility. It will be recalled that as long as food remains in the stomach there is a tendency for the distal 15 or 20 cms. of the ileum to be involved in a stripping type of peristaltic movement in the form of a reflex action. This peristaltic movement forces the fecal stream into the cecum. The cecum itself has very little peristaltic activity. It does possess tone in its musculature, however, which plays an important part in its function. As the cecum fills as the result of the stripping action of the terminal ileum, it increases in diameter and also in length. The cecum will tend to descend for several centimeters into the pelvis. When distention reaches a certain point, tone begins to assert itself, and the cecum begins to contract slowly. This contraction produces a narrowing of the lumen, as well as an elevation of the cecum from the pelvis, and gradually forces the contents of the cecum into the

ascending colon. There a similar type of muscular action takes place. Normally, the fecal stream will stay in the cecum and ascending colon for from three to five hours before being pushed over into the transverse colon. When the fecal stream reaches the right part of the transverse colon, peristaltic activity begins and it is carried fairly rapidly across into the descending colon and sigmoid. It perhaps is due to the extent of time in which this fluid fecal stream remains in the cecum and ascending colon in intimate contact with a broad area of absorbing mucous membrane that much of the water is removed from the feces in this portion of the bowel. It can be easily understood that if an infected carcinoma exists in this part of the bowel, muscle tone will be increased markedly and the dilatation will not be as great. Then, there will be an acceleration of the emptying of the cecum and the ascending colon, and there will be less opportunity for water absorption. As a result, cancer of these two portions of the colon, as has been previously stated, may result in frequent soft stools. Relatively rarely does one see an annular constricting carcinoma of the cecum or ascending colon because of the enormous diameter of the viscus in this area. On the left side of the bowel where peristalsis is quite active and where an annular invasion is possible, interruption of the peristaltic wave is of frequent occurrence. This probably explains early obstructive symptoms in cancer in that portion of the bowel more so than actual occlusion of the lumen. Infiltration of the musculature plus spasm will tend to prevent a peristaltic wave from passing beyond the site of the lesion. Therefore, the obstruction is partly functional as well as partly mechanical. If we bear these mechanisms in mind, we can understand how carcinoma in the cecal area can produce symptoms resembling obstruction. If the tumor, for instance, invades that portion of the cecum adjacent to the ileocecal opening, it is easy to understand how the presenting symptoms will be those of obstruction, particularly of the type seen in the lower portion of the small bowel. Again, if the cecal carcinoma presents itself in the region of the orifice of the appendix, it is easy to see how the presenting symptom will be appendicular obstruction. Indeed, this is a much more frequent occurrence than the reports in clinical literature would lead one to anticipate. So frequently does carcinoma of the cecum present itself with the clinical picture of appendicular obstruction, and even with necrosis of the appendix, that one always must be on the lookout for this as the underlying cause of acute appendicitis in people beyond the age of 50. Again, if the carcinoma of the cecum is such that it has produced very little ulceration or secondary infection, there may be no

diarrhea at all and the presenting picture may be one of a low-grade anemia with a palpable mass. Thus, carcinoma of the right colon may be most varied in its clinical appearance.

In a similar manner, carcinoma of the left side of the bowel may give a different clinical picture. For instance, in a patient who has a patent or incompetent ileocecal valve, obstructive symptoms often are rare and masked primarily by virtue of the fact that the patient receives abdominal cramps rather than nausea and vomiting. The competency of the ileocecal valve determines whether or not an obstruction of the large bowel will be a closed loop obstruction. Perhaps in one-third of the individuals, the ileocecal valve is competent and prevents a backflow of gas from the colon into the small bowel. In such an individual, therefore, obstruction of the sigmoid or descending colon will present rapid and profound distress. The nearer the obstruction is to the ileocecal valve, the more acute and the more extensive will be this distress. If such a process is allowed to exist for a considerable length of time, it is not an uncommon situation to encounter necrosis of the appendix from this obstruction or necrosis of the cecum.

An understanding of this mechanism gives us considerable insight into the therapeutic measures necessary as an emergency procedure in a patient with an obstructive lesion of the large bowel. If an x-ray film is taken of a patient in an upright position, a closed loop obstruction can be diagnosed by the absence of gas in the small intestine. Where such a situation exists, it is obvious that any effort to correct the obstruction other than by a direct opening into the large bowel will end in failure. We, therefore, have found it wise to do a right transverse colostomy immediately as an emergency procedure when these patients are first seen. If the operation is delayed for 24 to 36 hours, it often is necessary to do the less desirable procedure of cecostomy. Where there is no closed loop obstruction and gas may be seen regurgitating into the small bowel, decompression as a general rule is possible with an indwelling catheter, either in the stomach or down into the small intestine.

Therefore, an understanding of the physiologic mechanisms involved in large bowel motility and an understanding of the effect on these functions when the gut wall is infiltrated with tumor tissue at a particular site or when there is infection, gives us an appreciation of the cause of the symptomatology in large bowel cancer. An understanding of the cause of the symptomatology makes it easier to recognize and interpret these symptoms when they occur.

So far we have concerned ourselves with the diag-

nosis of a well-manifest cancer. Our next problem is a consideration of those situations which exist, producing the so-called precancerous state. How can they be recognized?

Perhaps the most common of all precancerous lesions in the large bowel is a polypoid overgrowth of the mucosa. These polypoid growths, or adenomas, are composed of cells which tend to produce mucus. For the most part, they are columnar in shape and many of them form what apparently is perfectly normal mucus. In some adenomas, however, it is not unusual to encounter a type of cell containing cytoplasm with finely divided granules rather than mucus, while others resemble normal cells which have recently extruded mucus. Evidence of epithelial growth shows itself by hyperplasia and mitotic figures. Where this hyperplasia is active, ulceration is not infrequent, particularly if the growth is traumatized by hard stools. The microscopic picture of an adenoma of the large bowel, therefore, is one of abnormal growth in which the cells tend to considerable extent to resemble normal rectal mucosa. This is only a tendency. Some of them may be present for years, producing little or no trouble. However, others may appear rapidly, show considerably less evidence of growth control, and the clinical state of cancer frequently ensues early. It is difficult, therefore, to prognosticate the fate of a particular lesion. For clinical purposes, the main difference between the benign and the malignant adenoma is one of degree or extent. When an epithelial overgrowth invades, it is cancer. As a practical clinical expedient, one chooses the muscularis mucosa as the boundary line in determining invasion. Thus, where there is epithelial hyperplasia in an adenoma which has penetrated through the muscularis mucosa, we call it cancer. Where it has not invaded the muscularis mucosa, we call it adenoma. Let us now examine the evidence that we can obtain to establish the presence of such penetration clinically.

When the height of a tumor is greater than the diameter of its base, the tumor generally is benign. When the tumor is not attached to the muscularis mucosa, it can be displaced over the muscle layer with ease, and it, likewise, generally is benign. When a tumor begins to invade at the margins under the normal mucous membrane, the adenoma becomes not so clear cut; and the ulceration which so frequently develops remains permanent. The edema and inflammatory infiltration associated with such ulceration produce a lesion much more rigid and hard than the original adenoma. Thus, ulceration, induration and chronicity make their appearance. With these findings appear different symptoms. The bleeding becomes much less in amount

but more constant. Inflammation with its sequelae may produce spasm of the bowel. The bowel wall becomes more rigid; and as the tumor becomes annular, symptoms of disturbed motility develop. A change in stool habits is often seen, and the picture becomes one of frank carcinoma.

Microscopically, these changes may be seen even more clear-cut. As one would imagine, when the growth becomes more sessile, microscopically there is evidence of lateral invasion. Also, one can clearly identify tumor cells going through and deep to the muscularis mucosa. With this entire picture, there often is an increase in growth rate. Where this occurs, there may be a lessening of differentiation. If so, enough evidence of this may be obtained by the morphologic characteristics of a particular group of cells. Often, however, this growth rate change is not so great as to be determined easily in such a way. It, therefore, may become necessary for the surgeon to excise the whole tumor in order to determine whether or not malignancy exists.

That the development of malignant change in these so-called adenomas may also be associated with the change in certain biologic characteristics in the cells is becoming more evident in experimental work going on in our Department of Surgery. During the transition of benignancy to malignancy we have been able to demonstrate in several instances of multiple polyps that there is an increasing inability of the cells to utilize oxygen. Respiration of the cell is interfered with markedly. The tissues apparently receive their oxidation by the process of glycolysis rather than the consumption of free oxygen. Effort to correlate these biochemical findings with the microscopic picture is beginning to show some fruit; and we hope that at a later date we shall be able to report on this phase of tumor growth in greater detail.

When we attempt to explain the origin of these focal areas of epithelial overgrowth in the mucosa of the large bowel, we encounter considerable difficulty. The vast majority of these lesions are single; and unless they ulcerate and produce serious bleeding, they usually are not detected until at a much later stage of their development. Where they exist in the rectum and can be observed proctoscopically, their growth has been noted at times to be slow and at other times to be quite rapid. Our effort to explain the origin of these single adenomas, however, still is most discouraging.

Certainly, some types of polyps or adenomas are hereditary. In stable communities where single families have lived for several generations and, therefore, where they can be followed, definite hereditary evidence exists particularly in the multiple type of

disease. At the University Hospitals in Iowa now we have a number of such families we have been able to follow for several generations. The inheritance of this factor which tends to produce adenomas seems to follow Mendelian principles, and the factor seems to be a Mendelian dominant one. We have several families in which neither the parents nor any of the grandparents have had a history of large bowel disability, while all of the siblings of the third generation have had multiple polyposis. This suggests that there may develop a genic mutation of a dominant nature.

Another very impressive observation in these patients that we have studied is the age at which the multiple adenomas have changed into cancer. We have two such families in which no member has lived longer than the age of 30 without having developed a cancer of the large bowel. We have another family in which the cancer has not occurred until past the age of 50. In other families, while there have been sporadic instances of cancer in the latter twenties, most of the cancers have developed in the fifth decade. The age, therefore, in which the adenoma becomes malignant, also, seems to be familial in nature. This observation has led us to recommend immediate or early total colectomy in the younger age families, while we have been willing to delay total colectomy somewhat in those who tend to develop cancer at a much later period. Again, these observations will be reported upon in extension at a later date.

Suffice it to say that when one encounters multiple polyps in a patient, he must realize that he is dealing with a lesion which sooner or later will eventuate into multiple carcinomas of the large bowel. Since sooner or later the entire colon will have to be removed, it seems to be a logical thing to remove the colon before the cancer develops.

This is radical surgery and requires considerable thought before such recommendation is made. In my opinion, it means a permanent ileostomy. While in many of these patients it is technically feasible to anastomose the ileum to the rectum low enough down so that the remnant of the rectum left behind can be easily visualized proctoscopically, it has been my experience that sooner or later this rectum will have to be removed. I have been impressed with the inability of the mucosa of these patients to stand a great deal of trauma. In several instances where a colostomy has been established, as we have staged the operation of total colectomy, during the period of only a few weeks while the patient was recovering from the previous operation we have noted the development of large adenomas on that portion of the mucosa attached to the abdominal wall.

Another predisposing factor in the production of

adenomas—and, therefore, in the production of cancer of the large bowel—is chronic ulceration. One sees such polypoid overgrowth of mucous membrane in any type of ulceration of the large bowel which exists for a considerable length of time. The most classical cause, however, of such polypoid development is the so-called chronic idiopathic colitis of the ulcerative type. I cannot stress too strongly the tendency of this horrible type of disease eventuating into carcinoma.

No surgeon has had enough experience with total colectomy for chronic ulcerative colitis to speak with statistical assurance. In 98 instances in which total colectomy has been performed at the University Hospitals in Iowa we have encountered frank carcinoma in nine patients. This perhaps is a higher percentage than one generally anticipates.

Even though the percentage of patients with ulcerative colitis who subsequently develop cancer may not be as high as our experience has shown it to be, I should like to stress forcefully the fact that in the medical care of ulcerative colitis the subsidence of the acute symptoms does not necessarily exclude the development of cancer years later. Therefore, a patient who once has had ulcerative colitis is a potential candidate for cancer of the large bowel. The symptoms of this disease, therefore, must be explained to the patient and that patient must be under constant surveillance.

A final lesion of the large bowel which I should like to mention as related to carcinoma is that of diverticulitis. Diverticulosis of the sigmoid and transverse colon is a common finding in people beyond the age of 60. Diverticulitis, however, is not so common. The clinical picture of diverticulitis often can mimic that of adenocarcinoma considerably. When a chronic diverticulitis of the colon is diagnosed and it has been decided to hold surgery in abeyance, it must be remembered that cancer still may be present. I do not know whether the chronic ulceration that is so often associated with diverticulitis is related to the genesis of carcinoma of the large bowel. Again, the experience of any single surgeon has not been sufficient to solve the problem on a statistical basis. However, my own experience has been that the association of these two diseases has been frequent enough for me always to be disturbed when I encounter a focal area of diverticulitis; and although the patient may show considerable clinical improvement on medical care, I think it is important to repeat the x-ray examinations over a long period of time until one can exclude adenocarcinoma definitely.

It appears to me that we have advanced considerably during the past 25 years in our understanding

and treatment of cancer of the large bowel. I think that we can anticipate even greater advances in the very near future. This is not idle wishing. If the knowledge which we already possess concerning the

diagnosis and treatment of this lesion were completely disseminated and adequate facilities for diagnosis and care existed, much more could be accomplished.

A Review of Long Range Results of Massive Resection for So-Called Inoperable Carcinoma of the Abdomen

Alexander Brunschwig, M.D.

New York, New York

Following the introduction of antisepsis and the continued development of anesthesiology, surgery during the latter part of the 19th century and early decades of this century established itself on an equal footing with internal medicine, the latter special field having dominated the healing art during the previous centuries. Numerous operative procedures were devised for the attack of a wide variety of neoplastic and inflammatory diseases. Techniques were evolved for the management of major and minor traumatisms. Operative surgery began to be regarded as having become crystallized about these many standard operations. In fact, in many quarters it was felt that operative surgery had reached the limits of its evolution and surgeons turned their attention to investigations of more or less fundamental physiological and biochemical phenomena associated with the surgical patient. Advances in bacteriology, nutrition, in physiological problems associated with surgical shock, the advent of the antibiotics—all of these contributed to making a major surgical procedure much less hazardous. With the increased safety under which surgical operations could be undertaken, it then became logical to inquire whether or not surgical operations themselves could be modified and extended. For example, the simple exteriorization operation for carcinoma of the colon a number of years ago was attended with a ten per cent mortality. If this could now be performed with a negligible mortality the question naturally arose whether exteriorization procedures were the operations of choice in regard to carcinomas of the colon. Indeed, it followed that the whole problem of the magnitude of surgical attack upon cancer had to be reevaluated. Three cases might be cited illustrating the magnitude to which a surgical operation may be carried with survival of the patient utilizing, of course, to the fullest extent all modern techniques for supportive measures of the patient undergoing operation:

Case 1. E. B., a 28-year-old white male, was operated upon for a large bulging mass in the left upper quadrant which had failed to regress under x-ray therapy and which apparently was the cause of extremely severe pain and discomfort every time the patient attempted to ingest food or liquids. At operation it was necessary to resect the tumor mass which was primary in the stomach by removing also half of the left lobe of the liver, the entire transverse colon, body and tail of the pancreas, spleen, omentum and areolar tissues in the upper posterior portion of the abdominal cavity. Adherent to the mass anteriorly was the fascia and musculature of the wall of the left upper quadrant and this also was resected. The operation was terminated by esophagojejunostomy, enteroenterostomy and double barrel colostomy, hepatic flexure to splenic flexure. Recovery from this massive resection was remarkably smooth and in a few days the patient enjoyed ingestion of limited quantities of liquids and food which gave him a great deal of satisfaction. He continued to do very well for a month and then suddenly developed widespread subcutaneous nodules, biopsy of one of which showed round cell sarcoma. By the end of the seventh week he had died and necropsy revealed widespread metastases involving practically all tissues and remaining organs of his body.

Case 2. F. M., a male aged 42 years. Roentgenograms showed two rounded masses in the left lung field typical in appearance of neoplastic metastases. In a series of films presented by the patient and taken over a period of two years, the presence of these masses and their slow growth was noted. He also complained of the continuous boring, severe upper abdominal pain with "high girdle" distribution (typical of pain produced by carcinoma of the body of the pancreas). No abdominal masses could be palpated. The patient having seen a number of physicians during the previous two years and ex-

periencing no relief from his pain stated in answer to our recommendation that he receive an abdominal exploration followed possibly by a second operation at which time the lung lesions would be removed, that he would undergo one operation but not two. Accordingly, the patient was prepared for laparotomy and through a high midline incision with left lateral extension the abdomen was opened, a fusiform swelling involving the body of the pancreas was found with no evidences of metastases elsewhere. Frozen section biopsy of the mass revealed fibrosarcoma and the body and tail of the pancreas with the spleen were resected. The abdomen was rapidly closed, the patient was redraped and, the patient still lying on his back, the fourth left rib was resected backward to the axillary line, the chest entered and a left total pneumonectomy performed. Both of these operations were, therefore, performed during a period of three hours with adequate supplies of blood, i.e., he received 1800 c.c., and shock did not develop at any time. Thus it was possible to do a subtotal pancreatectomy and splenectomy and a total left pneumonectomy at one sitting. He returned to work for a few months but died eventually of metastases one year and four months after the operation.

Case 3. A white male, aged 39 years, who because of abdominal pain was subjected to exploratory laparotomy in another institution. A primary carcinoma in the sigmoid was discovered with metastases that riddled the entire left lobe and with two metastatic foci in the right lobe of the liver. The abdomen was closed and the patient was told that he probably had about 60 to 90 days to live. Because of his strong desire to complete a certain business enterprise he stated that he was willing to do anything if he could be given about six months more of life. I operated upon him the middle of October 1948, and resected the primary lesion in the sigmoid performing an end-to-end anastomosis, resected an obviously metastatic gland in the mesentery corresponding to the site of the lesion. I then resected a small group of glands superior to the body of the pancreas which obviously were metastatic. Next, the entire left lobe of the liver which was riddled with metastases was excised and a resection of the solitary metastasis remaining in the right lobe was carried out. The second metastasis in the right lobe had been removed by the surgeon performing the previous operation in order to secure microscopic confirmation as to the nature of the lesion. Convalescence was essentially uneventful. It is now over three months since his operation, he is well, back at his desk at work carrying out all the duties which he had hoped to be able to carry out during the next six months. Interestingly enough he has gained

13 pounds in weight, has no pain and to all intents and purposes is living the type of life which he led about a year or so ago before the onset of symptoms.

Operations such as I have just described were performed in patients whose conditions were indeed desperate and if a certain amount of palliation was secured in that pain was relieved, prolonged survival was not anticipated in these patients. The question then arises in regard to the whole endeavor of radical surgery in what appears to be advanced abdominal cancer that conforms to the usual criteria of inoperability. If only very brief periods of relief are obtained, one might objectively argue the point whether or not such surgery is worthwhile. Would it not be possible to afford relief of pain by the judicious use of sedatives, careful adjustment of dietary regime, general activities and, if necessary, to perform ostomies or certain short-circuiting operations to obviate obstructions, chordotomies or lobotomies? I think that such arguments would indeed hold if more than just brief palliative relief from pain could not be obtained. Sufficient time, however, has now elapsed so that a more definite answer can be secured to the accomplishments of unusually radical procedures. Two years ago I collected a series of 100 consecutive radical resections performed for advanced abdominal cancer in the face of the usual criteria of inoperability. The first of these cases was performed some 12 years ago. Others were performed in the subsequent years. The purpose of this report, therefore, is to summarize briefly what has obtained in the way of prolonged survivals among these hundred patients.

(Lantern slides were shown demonstrating some of the operations and the operative specimens in patients who had survived for appreciable periods following radical operation for advanced cancer.)

Diagram 1 represents the fate of the hundred patients. Surgical mortality is indicated as 34 per cent; no patient died during the operation or in the operating room. Surgical mortality was defined as death within 30 days of the operation. In point of fact the average survival of patients in this group was six to seven days. In the next group of 17 patients there was thought to be no palliation and that the operation might well have not been performed as far as benefits to the patients are concerned. This group combined with the surgical mortality group equals 51 per cent of the whole series, roughly, half of the series. Therefore, in half the patients no benefit was obtained, they either died or were not relieved. In the remaining 49 per cent, however, it was felt that in 30 of the patients, or 30 per cent of the series, a very distinct palliation was obtained. The patients were markedly relieved from severe discomfort, obstruction, etc., and lived up to about

a year and one-half, some of them going back to their usual occupations at least part time. They all died of advancing and widespread metastatic disease. One of the things that impressed me was the fact that when widespread metastases did develop, the patients went down hill very suddenly and often died in a typhoid state, that is, relatively free from pain. The group that is of utmost interest, however, is the one of 19 patients, or 19 per cent in whom a prolonged survival was observed following radical massive resections for advanced abdominal cancer.

In Table I, seven patients are summarized who survived for periods ranging from two years and one month to five years. In all of these instances there was rather prompt recovery from operation and return to full time normal household or gainful occupation and a period that to all intents and purposes was characterized by a normal life in every respect. Attention is called to Patient No. 7, who died of a perforated stoma ulcer five years to the week after his operation and who was in effect a five-year cure since necropsy failed to reveal residual or metastatic tumor. His cause of death was entirely an intercurrent situation. Had we been much more radical in resecting the stomach it is possible that the stoma ulcer would not have developed and he would have continued to survive. At any rate the average survival in this group was for a period of three years and one month.

In Table II, are summarized the operations in 10 patients. These are all living and well today for periods ranging from almost five years to over 12 years. These can for practical purposes be classified as cures according to the usual definition, that is, five years survival without evidences of disease, except in one case, Case II, where after a period of six years and six months there is clinical evidence of recurrent disease in the region of the upper left posterior portion of the abdomen which was the former site of a massive adrenal cortical carcinoma. The average survival for this group of patients is six years and 10 months.

Reference has been made to 17 of the 19 patients in the long survival group. The two remaining patients proved not to have carcinoma when their radical operations had been completed and opportunity was afforded for study of the resected specimens. They both had had carcinoma proved by biopsy prior to radiation therapy. Complications of the latter in the presence of what prior to treatment was an advanced cancer led to the erroneous impression that cancer had recurred. The operations definitely established the fact that their disturbances were due to radiation reactions and burns and not to recurrent cancer. Inasmuch as they must be classified as radiation cures, they can not be included in this series of

good results from radical surgery, therefore, they are subtracted from the group. The net result in the whole series of 100 cases is, therefore, 17 per cent. Seven of these patients lived for periods averaging three years and one month before disease recurred and was fatal. Ten of them, that is 10 per cent of the series, have obtained what for practical purposes is equivalent to a clinical cure. I do not think it is stretching the point to assume that if the operations had not been carried out, these patients, with their carcinomas in situ, would not have pursued such a prolonged course and would not have lived as comfortably or without further disturbances due to the obstructions some of them had. It is to be realized, of course, that simple short-circuiting operations above some types of carcinoma afford patients prolonged survival in comfort, but in these particular cases I do not believe that short-circuiting operations alone would have permitted the subsequent satisfactory courses which they all have exhibited.

At the onset of this work some years ago not a little skepticism and criticism was voiced regarding this type of surgery. This is easily understandable. On the other hand, sufficient time has now elapsed to permit of some impression as to what might be accomplished. It is shown that 10 per cent of the patients have been for practical purposes cured of what was considered advanced abdominal cancer. In a number of these instances previous exploratory laparotomies had been performed and the abdomen closed by competent surgeons because of the presence of the usual criteria of inoperability. A 10 per cent salvage rate is nothing to be inordinately proud of. However, this series of patients was selected not for lesions which might be favorable for surgical attack but for situations which were unfavorable for surgical attack and in a number of instances, as stated, had previously been subjected to surgical attack but there had been recurrences or extensions. In dealing with advanced visceral cancer a salvage rate of 10 per cent, while not a remarkable success, does represent in my opinion a pure gain inasmuch as these patients probably would not have been living today had not the procedures described been carried out. I am reminded of the remarks of one who reviewed the monograph referred to above and which appeared in 1947, where I described in some detail the 100 procedures that were carried out. This reviewer stated that he had seen some of these operations himself and that to him they represented veritable autopsies in the living and he added such procedures have no place in sound surgical practice. I can not help but often wonder what the state of mind of this colleague would be if he, himself, happened to be among the 10 per cent (prolonged survivors) which we discussed above.

As we all know, statistics compiled in order to afford objective impressions can be very misleading. Thus the mortality rate and the survival rate in the series which I have summarized apply only to this group of 100 patients. There is no reason to think that they could apply to a subsequent series of 100 patients or that they would apply in a series of 100 patients that might be developed by some other surgeon in another institution. The reasons for this are obvious and will not be discussed here. The important point is that by utilizing to the fullest extent all the measures for supportive treatment for the surgical patient that have been developed up to date and are being constantly improved, extensive surgical procedures can be carried out that not so many

years ago would have been considered entirely fanciful and that not only can such patients be brought through the operation and through the immediate convalescent period but that they can be given some chance for prolonged survival in comfort and be permitted to live normally. With this in mind physicians, therefore, must in every case of so-called advanced cancer, deliberate thoroughly before pronouncing an absolutely fatal and hopeless prognosis, for while the chances for benefit in many cases might be extremely small, they nevertheless are there. An utterly defeatist attitude in the presence of what seems to be an advanced abdominal cancer is no longer justified.

Prospects in Cancer Control

Charles S. Cameron, M.D.

New York, New York

In ordering my thoughts in preparation for the remarks I am about to make to you, I was gradually led by certain considerations to wonder when the title of this speech was chosen and by whom: "Prospects in Cancer Control." Whoever he was, he has in some measure the gift of prophecy. For, since the State of the Union speech by the President, prospects for the future of cancer control, indeed for the future of all medical practice, have taken on added and deeper significance. You are neighbors of the President and it may be that this fact influences your political philosophy. I have no intention of engaging in controversy on my first visit to you, but I must say I can hardly discuss the future of cancer or of any other aspect of medical science without some reference to the possible role of the federal government.

I want to say at the outset that if there is a majority disposition on the part of the profession and on the part of the people they serve to maintain the status quo of medical practice, to preserve the dignity of individual responsibility based on free choice of a personal doctor-patient relationship, that position can be maintained with the help of the voluntary health agencies of our country. For example, the needs of poliomyelitis patients are being met today in a way which I understand is acceptable to doctors by and large. Now the difference between poliomyelitis and cancer or multiple sclerosis or mental illness is one of degree only so far as the economic aspects of disease are concerned.

I would like to remind you by way of prefacing what I have to say that nowhere in the world do the

voluntary health agencies flourish as they do in this country. There are over 2,000 of them. They are supported for the most part generously and willingly by a public which can exercise, so far, free choice as to what agencies shall receive their gifts. I am sure that the present state of health in this country is in large measure due to the activities and to the stimulus of these voluntary health agencies. One can trace, I think, very clearly the growing effectiveness of the National Tuberculosis Association, in particular, in demonstrating to state legislators their responsibilities in tuberculosis control and can parallel the growth of that influence with the increasing controllability of tuberculosis.

There are two objectives in controlling cancer: the first is of course, the very obvious one: the discovery of a cure or a means of prevention. The second is perhaps not so easy to define because it consists of a number of interlocked factors. It is the effective use of methods we now have at hand. If we were to make no more progress—and you have heard today that we are making progress in clinical medicine—if we were to make no more progress in so far as our techniques of diagnosis and treatment are concerned, still by the maximum effective use of what we already have and know, we believe we could save over one-third of those who now die.

Now an analysis of the future can, I think, be made more meaningful and intelligent if we develop it from the point of view of the past and the present. I should like you to consider briefly the picture in 1913 when the American Cancer Society was founded. That is 36 years ago. Cancer stood eighth in the

list of causes of death, preempted by heart disease, tuberculosis, pneumonia, Bright's disease, diarrhea and enteritis, intracranial lesions of vascular origin and arteriosclerosis. And yet 71,000 per year were dying of it, or one in 18. What research there was was more of alchemy than science. There was one cancer hospital. There were no cancer clinics. There was no support of a program for cancer control by the federal government, and only one state recognized its responsibility thereto. There was no word of cancer which appeared in the media of public information for lay people. Nowhere was cancer a reportable disease in terms of morbidity. Biopsy was still a subject of controversy at medical meetings. Radiologists gingerly employed the newly discovered Roentgen rays. Radium cost \$100,000 a gram, five times its present price. Surgery still bore the shreds of its frock-coat chrysalis. The operation for cure of cancer of the stomach was 30 years old. The hysterectomy which was then called radical but which we will have to modify now by some other term (perhaps radical prime) was then 16 years old. The operation for cure of cancer of the rectum was unknown. Tumors of the lung, esophagus, pancreas, and central nervous system were not yet surgical diseases. Anesthesia was limited to two or three agents of limited flexibility. Medical education was not standardized in any degree and diplomas awarded by diploma mills were recorded the same recognition as those of Hopkins and Harvard.

The intervening years, a period slightly in excess of a single generation, have seen advances of heroic proportions. If I may again digress to give you the general background so that you can appreciate the degree of progress which has been made, I would like to remind you that we are in the green years of medical discovery. Think how much we regard today as commonplace is less than 100 years old. It has been 108 years since Crawford Long demonstrated general anesthesia, 85 years since Mendel set down the laws of heredity, 83 years since Lister introduced antiseptics, 64 since Billroth successfully removed part of a cancerous stomach, 55 years since Roentgen gave x-rays to the world, 51 years since the Curies discovered radium, 49 years since the first hormone was isolated, 42 years since Freud applied what he could of science to the mind of man, 38 years since vitamins were described, 35 years since an impecunious Japanese succeeded in producing cancer at will for the first time on the ears of laboratory animals, 28 years since Banting discovered insulin, 18 years since Domaqk introduced the sulfonamides, 16 years since an entire lung was removed successfully for the treatment of cancer, 16 years since Joliot demonstrated artificial radioactivity, 13 years since the discovery of the molecular

nature of the viruses, 10 years since penicillin as a drug was suggested by Flemming, nine years since Fermi set up the first atomic pile, five years since the pancreas was removed for cancer.

It is a fact from which we may all take heart that almost everything we know about cancer today, how to diagnose it, how to treat it, we have learned in the space of two generations.

Now, so far as the present is concerned, in respect of cancer research, let me say that there seems to be a very widespread belief among Americans that if you put enough money into something and mix it with the right amount of brains, the answer is bound to come out at the other end. That belief is born partly of our own remarkable technological advances and partly of the experiences of the recent war, and it may not be far from the truth, but let me say that there is an element in this formula which I believe is as important as money and brains and that is strategy. I believe that the voluntary health agencies which I hope will play an increasingly important role in the future of cancer in this country, have made a contribution in the way of strategy to the entire research program. In order to do this the American Cancer Society has called into being the Committee On Growth, a group now numbering 140 of the nation's leading scientists representing virtually every scientific discipline. These men meet at regular intervals in Washington or elsewhere and they consider unsolicited requests for grants-in-aid which come before them. They weigh them carefully and decide which, in the light of the limited funds available, are the most likely to bear fruit. They are recommended to the American Cancer Society and our role from then on is simply one of comptroller. But this committee has done more than simply weigh the merits of requests for grants-in-aid. The committee has attempted to analyze what Dr. Conant calls the "total scientific situation" and to define the avenues of research in greatest need of illumination, the avenues along which we may most profitably proceed in order to shorten the research task ahead. This is application of strategy, the bringing to bear on the subject of cancer, in a single organization, all of the scientific disciplines (and cancer is no longer the responsibility of the surgeon, nor of the radiologist, nor of the pathologist). There is practically no discipline in science which is not now called upon in our effort to solve the problem. These disciplines are represented in the Committee On Growth, and I believe that that committee is as devoid of partisanship as it is possible for a group of human beings to be.

I should like to tell you the extent of the present support of research in this country. From the American Cancer Society since 1945 you have heard Dr.

Nesselrode say we have had 81 fellowships supported; there have been 241 grants-in-aid; there have been 35 institutional grants, a type which is a new development and which I shall describe subsequently; and the total program has cost \$7,815,000. This year alone, the Society will spend \$3,200,000 in support of research. The federal government is spending annually \$5,920,000. From state governments and foundations and from investigators' pockets, I estimate that we are spending \$1,500,000; from the Atomic Energy Commission devoted to cancer alone \$1,366,000; from the Damon Runyon Fund \$1,300,434. This means a total of \$13,286,434 last year alone in support of cancer research.

What have these researchers brought forward today? I have not the time, nor, I think, the competence, to go into them. I simply want to remind you of some of the things we know about cancer. We know that there are about 425 separate chemical compounds related basically of course which will produce cancer when applied topically or when administered in certain ways to laboratory animals. We know that there is a very striking similarity between the structural formulae of these known carcinogens and certain naturally occurring body secretions called the steroids, of which the sex hormones are perhaps the most familiar to you, and the entire relationship of hormones to cancer is of very recent development and one which I think is the most tantalizing at the present time. We know that there are three or four tumors in animals which are produced by viruses, those disease causing agents which behave like bacteria but which are too small to be seen. We are sure that they are there and recently some have been seen with the aid of newly developed instruments.

We know reasonably well what the genetic pattern in relation to the heritable factors now consists of as a result of 30 or 40 years of work by very careful laboratory workers. There has been brought to light recently a phenomenon which seems to touch on both the genetic and the virus side and that is the milk factor, something which seems to be present in the milk of mice of high cancer strains and which is passed on to their female offspring. Of course it is passed on to the males, too, but they naturally do not develop cancers spontaneously. The milk factor has been, it is alleged, identified as a virus. The field of isotopes has received a good deal of attention in the papers, perhaps more than it deserves from the point of view of the possible treatment of cancer, but certainly we can learn much of the basic processes of growth and body metabolism underlying malignant tumors through the use of isotopes.

Chemotherapy is based upon the search for drugs which will exert a specific, selective, toxic effect upon malignant tissue and leave normal tissue rela-

tively unharmed. We haven't got what we are looking for but there are some interesting leads, for example the nitrogen mustards you have heard of, stilbamidine, urethane, colchicine (podophyllin) and now the folic acid antagonists.

Finally, we are working hard on the analysis of the protein nature of the nucleus and of possible relationship of enzyme systems which may interfere with the structure of the protein nucleus in cancer.

What about control? The answer to cancer will come from the laboratory ultimately. It may be five or 500 years in coming and until it does we must be about doing what we can with what we have in hand. The funds of the American Cancer Society for cancer control amount annually to \$9,000,000; from the federal government comes \$6,000,000. State governments provide about \$2,500,000. The total budget for cancer control in this country then as contrasted to cancer research is \$17,500,000. What does the program consist of? It consists of the attempt to educate 100,000,000 people about something they don't want to hear about. It consists of doctors training in medical schools, in their internships, in their postgraduate training, in residencies; and in an effort to keep practicing physicians abreast of our advancing frontier of knowledge in respect of cancer. There are in the country today 13 cancer hospitals; there are 434 cancer clinics; there are 74 cancer diagnostic clinics, a total of 521 facilities specifically designated for the diagnosis and/or treatment of cancer. There are about 230 cancer detection centers. There is a volunteer organization at work in this country which I think can do much to solve the problem of the terminal cancer patient. The cancer patient, by choice, or by necessity, usually spends his last days in his home. Thirty-four divisions of the Society operate loan closets supplying needed room equipment to people unable to pay for it. Forty-seven divisions have dressings units supplying fresh and sterile dressings to patients who need them in any quantity needed. Twenty-five divisions have facilities for transporting patients without cost to the doctor or to the hospital. This volunteer organization also provides other services, sitters, home care, occupational and recreational therapy, and assistance in the preparation of diets.

May I say a word about cancer detection centers? They are a point of controversy. The American Cancer Society didn't invent them. We do support them as we would support any new possibility of controlling cancer. I don't know whether they are good or bad. I am not sure that they interfere with the private practice of medicine. I do know this: that in this country in the cancer detection centers that are operating, 42 new cancers a month are being found in people who consider themselves to be

in good health. That may or may not be an achievement. It's a drop in the bucket; I'm sure of that.

In the collection of cancer statistics today, there is inadequate reporting of cancer deaths. The rate is 183 per 100,000 in New York state and it is 66 per 100,000 in South Carolina. This does not mean that your chances of getting cancer are less if you live in South Carolina, but rather that your chances of having your cancer found and properly treated are less. So far as morbidity is concerned only 25 states provide for the reporting of cancer under legal warrant, and in only two of these does it come close to being successful.

Now, as to the future. Does that research fund sound like enough? It is not! Suppose for example that we could be assured of discovering the causes of cancer and the means of preventing it if we were to spend \$2,000,000,000 in research, which is what it cost to build one atomic bomb. At our present rate of spending, we would arrive at the answer to cancer in 142 years, but the secrets of cancer are certainly more elusive than the secrets of the atom. And we knew at the outset of the atomic project much more about the nucleus of the atom than we know today about the nucleus of the cell.

I do not believe that the answer to cancer will come in the future like a bolt from the blue, or that finding one piece will permit the others to be turned up very rapidly, although that is conceivable. I believe that cancer is many diseases and causes and there may be many treatments or many methods of prevention. In any case I am sure that our delineation of the problems and the answer will come by a process of slow eating away at the problem so that a future historian will never be able to say at what moment we had the answer in hand. It will gradually grow upon us. That's my idea and I may be proved wrong next week. I hope I will be!

How much money could be effectively spent now in the support of research? You have heard Dr. Nesselrode say that Mr. Adams said we couldn't spend much more than we are. That, however, was two years ago. We have turned out fellows since then, we have advanced the general area that we've been working since then, and I believe that \$8,000,000 could be spent effectively next year over what we are spending at the present time.

We need to develop more cancer research centers. We have many small ones doing research which is nominal research but we need to develop more centers which have broad interests in cancer. I think we need to do this for this reason: we first of all need a proper spawning ground for young scientific minds. There just aren't enough top-flight laboratories to put trainees into. You've got to put them into laboratories a little lower down in the echelon

of excellence, and put them to work, give them responsibility; as they become good, they will filter up by the process of selection which is well established and they will find their places. Moreover, in order to do top-flight research you've got to have a basic ground work of, shall we say, mediocre research going on. I do not feel, therefore, that we are being entirely fair in emphasizing the establishment of just a few research centers. On the other hand, we are being severely criticized for spending research funds according to a certain pattern. The pattern falls in the northeastern part of the United States. It falls around the northcentral states and it falls around San Francisco. People say to us, "This is favoritism. Those are the same areas of the country where the men on your Committee On Growth come from." Now it is not the fault of the poor volunteer health agency that scientists choose to group themselves in institutions the way they do. They are there. That's where we've got to go to get their advice and that's where we've got to go to get the work done. It is not our fault.

The future must see the development of more trained minds. And the need for financial subsidy during training and richer rewards during careers is very apparent to us. How this is to be done, I am not quite sure. Whether a voluntary health agency can undertake to do it, I doubt. There seems to be a need for a basic revision of our evaluation of men who are going to devote their lives to research. A man of great competence will come into a research laboratory and he will begin to learn something about a highly focused field of endeavor. If he is good, industry will come along and take him away at four times the salary he will earn in a university laboratory. If he is a doctor and we want him for teaching, he will be called away by the rewards of the private practice of medicine. This is the problem we are trying to face.

The prepared mind is essential to carry this investigation forward. On the wall of the student dormitory of Harvard University is the phrase of Pasteur: "In the realm of discovery chance favors the mind which is prepared." Now the stories of what has happened to prepared minds are, of course, numerous. Some of them are apocryphal. You are all familiar with the story of how Archimedes came upon the idea of specific gravity when he noticed the lightening of his own body when he dipped it into the bath and of how the young boy, James Watt, came upon the power of steam when in his mother's kitchen he saw the tea kettle lid being lifted off, and of Newton who lay musing one summer day in an apple orchard and by so casual an event as the dropping of an apple came upon a trend of thinking which led to the elaboration of a law of gravitational

force. The one I like best concerns Galileo, who, standing in a cathedral in Pisa, watched the long cathedral lamps swaying on their chains and by that stimulus was led to formulate the law of the pendulum from which came the validation of the Copernican system and all we know today of the universe we live in. Now the point is that people had taken baths before Archimedes and apples had fallen before Newton, and Italians had watched the cathedral lamps swaying, but these people remained unmindful of the fact that they were being brushed by the winds of great mysteries. It took prepared minds to synthesize these simple events.

If we are to develop our man power to the fullest in the future I am sure that we must go beyond college and reach down into the high schools to set adolescent minds on the right road. One of my pet peeves is the methodology of teaching history, for example. History as it is taught today is simply a succession of political intrigues and military encounters. I think that science molds the course of history more potently than any of these. We want serenity, peace, contentment and the satisfaction of making our presence here worthwhile. We want time to live and love and read and listen and enjoy and marvel at the universe. These things science can give and is giving and yet, a history student can tell you the names of the bastard sons of the French kings but he can't tell you who invented the microscope. I believe that the saga of the development of nylon is infinitely more exciting and can be made so for young minds than the story of the Norman invasion.

So far as the future of research is concerned, let me conclude by saying that we stand on the shoulders of the scientists who have gone before. It is what I referred to before as the total scientific situation. There may come a breakthrough but I'm afraid it is unlikely because the course of scientific discovery is that of serendipity.

Horace Walpole many years ago read a story called "The Three Princes of Serendip," Serendip being a province on the island of Ceylon. These princes made a remarkable discovery. They would set out to go somewhere but they were constantly being beguiled by an attractive cove or a mountainside or a glen and if they went there and stayed instead of going where they started out to go they usually had a much better time. Now he applied this principle of finding a bypath richer than the path toward your original objective, serendipity. Incidentally he tried the word out on a literary friend and said, "What do you think it means?" His friend said, "I imagine it denotes that state of mind consisting of equal parts of serenity and stupidity." The course of scientific discovery is usually indirect. I like to think of it as

a kind of Brownian particle progress—bouncing off this discovery, running up against this fact laid clean by a co-worker and steering into another direction.

That is the reason why I believe research of the future should be supported at an increasing rate on the basis of the mass or institutional grant rather than by grants-in-aid. You cannot put the blinders on a searcher for the truth...blinders which are inevitable if you hand him \$4500 and say, "What are you going to do with it?" and he writes it down on a piece of paper, "I will do this with it." That is not the quickest way to get at the truth. The quickest way is to pick the right man, the man of integrity, the prepared mind, and to give him a large sum of money and say, "Go away and come back in three years and let's see what you've done with it." That is what the search for truth demands if we are to get at it in the shortest possible time and that is why we have set up a new formula for giving research funds which we call institutional grants...large grants, grants covering broad areas.

Now a word as to the future of cancer control. It is our objective to try to make every adult in this country aware of cancer's early warning signs and of the importance of doing something about it quickly. That is not easy. We've got to be a little bit bold about it. We are being criticized because we are frightening people about cancer but our critics are themselves divided into two camps: on the one side we have people saying, "Why you're frightening people so badly that they are afraid to go to the doctor." On the other side are the doctors who say, "Why, you're frightening people so badly that they are going to the doctor when they haven't got anything wrong with them." I don't believe that anything we produce, anything we write for the radio, anything that we make for a motion picture is sufficient to induce a serious neurosis. I think the neurosis is there to begin with and that if people are going to get neurotic about disease, if it isn't about cancer then it is going to be about heart disease, insanity, or pregnancy, or whatever else comes along to be the pin upon which they can hang their neuroses. And then, of course, people have been afraid of cancer for years and years before the cancer society ever came into being. If a person happens to feel that way because of a harrowing experience with a relative or friend the cancer society is more than likely to be blamed for it.

Now let me remind you that this is nothing new. "In the year 1734 suddenly the whole female population of Bensancon was overcome by a fear that they were suffering from cancer of the breast or might be so affected in the future. This followed the suggestion of a surgeon to the women of that city that they examine their breasts for lumps. The

sequel of this announcement was that all women examined their breasts so often and so long and squeezed them so much that a certain number really did develop lumps which were subsequently speedily removed by the surgeon with the greatest success." This is the account by Wolfe, of an epidemic of cancerophobia over 200 years ago. But note the successful outcome!

We are trying to develop more competent doctors. I say "we" meaning all of us; the government is trying to improve the teaching of cancer by liberal grants to medical schools; we are providing fellowships to enable young men of promise to develop added competence in the treatment of cancer and it does require added competence. We are trying to develop the right formula for interesting the general practitioner so that he will increase his index of suspicion and think of cancer first among the diagnostic possibilities in every patient who comes into his office. What about detection centers? They are doing a job as I have indicated. But as soon as every doctor is willing to take every patient seriously who comes into his office and who says "I'm all right but I'd like to be sure I haven't got cancer," and does what the patient expects him to do, does as complete an examination as he can within the limitations of his office, then every detection center in the country can close its doors as far as we're concerned.

Clinics? Well, if there are 434 and the American College of Surgeons says that one for every 50,000 of population is a good number, then we should have six times as many as we have and I can think of no state in the country which has done a more thorough job in establishing cancer facilities than your own state of Kansas.

We need to develop a formula within what is practical and reasonable for taking care of cancer patients who no longer can receive the benefits of surgery or irradiation therapy in a curative sense. We need to develop a plan whereby these patients can be put back in their homes and yet not completely dropped out of hospital census. They must be visited by doctors who know what they're about and by nurses who can give them about what is tantamount to good hospital nursing care. We think the formula for that has been established and that it will come into wide use in the years to come.

We need to know something about how many patients with cancer there are in the country and it can only be achieved by making cancer a reportable disease in every state. Whether it is done by law or on the basis of a voluntary registry doesn't matter—whichever is more agreeable to the doctors. We think we have the formula for that and every State Health Commissioner will be brought to Memphis

in February in order that we can give him the formula and in the hope that he will carry it back and put it into use. We need to do something about the epidemiologic studies of cancer. We hear, for example, that smoke may cause cancer of the lung. Smoking cigarettes, or industrial smoke? We have the means; we have the technical competence now to lay that ghost and to find out whether it's true or whether it isn't. Is the atmosphere of Bridgeport, Connecticut, more cancerogenic than that of Santa Fe? Why don't Orthodox Jewish females get cancer of the cervix as much as the rest of the population? These are tantalizing problems in environmental cancer which could shorten the research task ahead if we could put them on the same dignified basis that we put laboratory research. We are coming out to Utah to see whether it's true that orthodox Mormons don't have cancer. We've heard they don't, and if they don't we'll find out why.

What are the dividends to be expected of this fullest possible use of what we know today? Well, they run something like this: the average patient with cancer of the larynx is hoarse for 5½ months before he goes to a doctor about it. We are curing about 30 per cent of cancer of the larynx in the best clinics today, but in selected series, patients with small tumors and who had been hoarse only a short time, the cure rate runs as high as 90 per cent. If a cancer of the rectum is as big as the end of your little finger and confined to the mucosa of the rectum, 80 per cent of the patients will survive for five years without disease. The overall cure rate of cancer of the rectum is, of course, about a quarter of that. Cancer of the cervix is curable in 70 per cent of the cases when the tumor is confined to the cervix. The overall rate is about 15 per cent in cancer of the breast; three out of four will live for five years without disease if their tumor is confined to the breast; the overall cure rate is about 40 per cent, and of the advanced cases the rate is 20 per cent.

I don't see much on the horizon of the future that is hopeful for cancer of the stomach or of the pancreas or of the liver, but there is a form of cancer which is said to be second in the list of causes of cancer deaths now and may actually be first; I refer to cancer of the lung, and there is something we can do about that because it is a surgical disease. It is curable. The man who was operated on in 1933 and had his lung removed and made history thereby is still practicing obstetrics in Pittsburgh, so you see it can be done. How do we get at early cases? By emphasizing the importance of mass chest x-rays. They are as vital as tuberculosis case-finding studies. Tuberculosis is interested largely in young people because that's where tuberculosis occurs. We are interested in old people, 45 and over, because that's

where cancer occurs. I think that our program of chest examinations should be at least as vigorous as that of the tuberculosis association.

Now there is one strike against us and it is a serious one. We can do everything I've said and I'm afraid the death rate from cancer will increase in spite of us and it is for this reason: that as a population we are aging so very rapidly. In the year 1900, there were 13,000,000 people in this country 45 or over. Today there are 39,000,000 people 45 and over, an increase of three fold. This same Horace Walpole that I'm so fond of said some 150 years ago: "About the time I die or a little after it will be discovered how men may live forever." A very clever poet answered him not long ago. She said:

Horace, be comforted to die,
One century has measured by
And half the next
Since it was true
The temporal state eluded you.
Now as I read your pensive letter
I wish myself that times were better,
That I might boast how men contrive
As you foretold, to stay alive.
By now we should possess the key
To fleshly immortality
And, if we wanted to endeavor
To live forever and forever.
This to my infinite regret
Is not a custom with us yet.
I write you Horace for good cheer,
Life is about as usual here!

Now there is room for everybody in the future in this effort to control cancer. There is a job for the government to do. There is a job for the voluntary health agency to do. There's a job for every doctor to do. I believe that we can work together

if we will sit down and arrive at a reasonable program. We already have a good working relationship with the National Cancer Institute officials, and for practical purposes, we divide our provinces. In effect, we say, "We can educate lay people better than you can, Government, but you may have to subsidize medical education. Nobody else has the money to do it. Doctors take our efforts to keep them abreast of our advancing knowledge a little more kindly than they'll take yours, therefore we do that. You give more money in support of research and see that you do it without any political controls."

If I may become personal, let me say that you must not feel that because you're not looking through a microscope and because you're not trying to extract an etiocholenolone from the urine of a patient with cancer that you haven't got a contribution to make. We all have according to our ability. It may be great, it may be small, but it is there. When I think of that I am reminded always of what an old Quaker lady said when I went to college. I went to a Quaker college and we were dragged to meeting once a week; we didn't like it then, but I heard some very wise things said. She was a very old lady and she told us how when she was young her father had taken her into country which was then quite wild, into the Grand Canyon. They had gone farther than they knew and as they turned to come back their horses were dry and desperately in need of water. As they tried to indicate to the animals in what direction they thought water was, the horses refused to move but stood still pawing the ground. There beneath what appeared to be dry sand and rubble, eight inches down, they came on water. Her moral was that if we will look for the freshets of the spirit beneath the rubble of the routine of our daily lives, we'll find there things that are useful and which are intimations of great achievements.



The Diagnosis of the Leukemias and the Malignant Lymphomas

Talbert Cooper, M.D.

Rochester, Minnesota

I. The Leukemias

Leukemia may be described as an invariably fatal disease of unknown origin characterized by abnormal, unbridled proliferation of leukocytes, principally the precursor forms, in their usual sites of development and in various other body tissues as well. As a rule, the process is reflected by characteristic changes in the number and morphologic characteristics of leukocytes in the peripheral blood stream. In a considerable percentage of clinically and pathologically identical cases of leukemia, the peripheral leukocyte count is found to be normal or subnormal. To classify such cases, the inconsistent term "aleukemic leukemia" is generally employed. Some authorities prefer the designation "subleukemic leukemia," which has the distinction of inaccuracy in a different sense. "Leukopenic leukemia" almost always describes the situation more satisfactorily but is less commonly applied.

Classification.—The leukemias are conveniently labeled in recognition of the type of leukocyte primarily involved. While interesting subvarieties occur, to the pleasure of the morphologic hematologist, the great majority of cases are satisfactorily classified as myelogenous, lymphatic or monocytic. The degree of immaturity of the leukemic cells, coupled with clinical considerations, permits further separation of the leukemias into acute, subacute and chronic forms.

The relative incidence of the various types of leukemia is difficult to determine because of differences in terminology employed by different observers and because of the difficulty all have experienced in sorting out some of the "stem cell" types.

Age Incidence.—Leukemia of all varieties occurs at all ages. During childhood and through the early twenties, the great majority of cases are of the acute variety. Chronic myelogenous leukemia is the most common type during the third and fourth decades, while chronic lymphocytic leukemia is the predominant type after 50 years of age. Monocytic leukemia, which is more often acute than chronic, occurs most often in the middle-aged group.

Diagnosis. 1. Clinical Manifestations.—Clinical manifestations of acute and chronic leukemia are too numerous and variable to permit detailed consideration at this time. However, the signs and symptoms provoked by the different morphologic varieties are sufficiently similar to allow a general consideration

of the two principal clinical types, acute and chronic (Table 1).

Table 1
Leukemia: Clinical Manifestations

<i>Chronic</i>	<i>Acute</i>
1. Enlarging hematopoietic structures	1. Decreased production of normal blood cells
2. Infiltration of other organs and tissues	2. Increased catabolic activity
3. Decreased production of normal blood cells	3. Enlarging hematopoietic structures
4. Increased catabolic activity	4. Infiltration of other organs and tissues

(a) Chronic Leukemia.—In chronic leukemia, the onset is usually insidious and the course is slowly progressive. Many cases are discovered accidentally during routine examinations or during studies carried out for unrelated conditions. Observation of such cases indicates that a period of two or three years may elapse after the discovery of an abnormal blood picture before significant symptoms develop.

(1) Enlarging Hematopoietic Structures.—These most often provoke the symptoms leading the person who has chronic leukemia to visit his physician. A sense of fullness in the left upper quadrant of the abdomen or attacks of pain in the same region may call attention to the presence of splenomegaly. In chronic myelogenous leukemia, the spleen may attain staggering proportions. Splenomegaly is also the rule in chronic lymphatic leukemia but is usually only moderate in degree. Conversely, lymphadenopathy is often striking in chronic lymphatic leukemia but is infrequently observed in chronic myelogenous leukemia. Enlarged mediastinal nodes may, of course, provoke a variety of symptoms.

(2) Leukemic Infiltrations of Other Organs.—While widespread infiltration of the various organs and tissues is common to leukemias of the various types from the pathologic point of view, clinically significant involvement of the skin and the gastrointestinal and respiratory systems occurs with greater frequency in chronic lymphatic leukemia than in chronic myelogenous leukemia. Cutaneous involvement in the latter is a notable serious prognostic sign, but occurs relatively early in a considerable number of cases of Schilling's monocytic leukemia.

(3) Disturbance of Production of Normal Blood Cells.—This is thought to result from "crowding out" of normal hematopoietic elements by leukemic cells in the bone marrow. In chronic leukemias the symptoms of anemia usually appear during the course of the disease. Purpura, resulting from thrombocytopenia, usually is a late development if it appears at all.

(4) Increased Catabolic Activity.—This, as evidenced by loss of weight, sweating, an elevated basal metabolic rate or nervousness, may be manifest in chronic forms of leukemia but these symptoms are most prominent in the terminal phases. Fever is relatively rare in chronic leukemia; its appearance often indicates an acute transformation of the process.

(b) Acute Leukemia.—This is characterized by a fairly acute onset, often suggesting an infectious disease, with a precipitous course to death within a period of weeks or months.

(1) Disturbance of Production of Normal Cellular Elements.—This causes severe, progressive anemia, hemorrhagic phenomena or lesions resulting from impairment of normal defense mechanisms (noma, and so forth) and is often responsible for the initial symptoms.

(2) Increased Catabolic Activity.—This produces fever, prostration and malaise, and is a common early development.

(3) Enlarging Hematopoietic Structures.—These are responsible for symptoms relatively infrequently in cases of acute leukemia. The spleen, when palpable, is usually only slightly enlarged. However, it may be considerably enlarged in some cases of acute lymphatic leukemia. Lymph nodular enlargement is not often conspicuous except in occasional cases of acute monocytic leukemia.

(4) Infiltration of Other Tissues.—This is apparent clinically less often in acute than in chronic forms of leukemia. Swelling and ulceration of the gums often develop in acute leukemia, particularly the monocytic form. Involvement of bony structures, with bone and joint pain, may suggest the diagnosis of rheumatic fever or osteomyelitis.

(c) Subacute Leukemia.—A subacute category has been utilized to include cases with intermediate clinical manifestations. Usually they more closely resemble the acute forms than the chronic. Cases in which the patients survive six to twelve months after the onset of symptoms have been arbitrarily regarded as subacute by some authorities.

It should be emphasized that the clinical course of a case of leukemia is subject to extreme and unpredictable individual variation. Approximately one third of chronic cases assume the clinical characteristics of the acute variety in the terminal stage of the disease.

2. Hematologic Findings.—The principal features of the blood picture encountered in the usual case of acute or chronic leukemia are summarized in Table 2. Time will not allow a detailed morphologic discussion, but accurate classification of the process is highly desirable from the standpoint of therapy and prognosis.

(a) Leukocyte Count.—The total count is highly variable in all types. The level of the leukocyte count does not necessarily parallel the clinical picture. In the same case, the count may range from leukopenic to extremely high levels. Aleukemia, or leukopenic leukemia, constitutes as many as 50 per cent of cases of lymphatic origin, including particularly the acute forms of the disease. It is less common in the myelogenous variety.

(b) Differential Count.—The basophilic leukocytes are commonly increased in chronic myelogenous leukemia. The percentage of very immature forms or stem cells usually is less than five per cent in chronic leukemia. On the other hand, the percentage of stem cells in acute leukemia is usually much greater and may be 90 per cent or more. In acute leukemia of the myelogenous type, reddish rodlike cytoplasmic inclusions called "Auer bodies" are frequently seen. Occasionally the picture defies differentiation into a specific type and must be classed as a stem-cell leukemia. The type may, however, be suggested by the character of the accompanying cells.

Table 2
Leukemia: Hematologic Findings

	<i>Chronic</i>	<i>Acute</i>
Leukocytes	Leukopenic to very high levels. Usually 200,000 to 300,000	Often leukopenic Rarely exceeds 100,000
Differential	Disturbed in favor of cell type involved. Immature forms	Greater percentage of blast forms. Auer bodies
Erythrocytes	Mild to moderate anemia common, varying with stages of disease	Moderate to severe anemia characteristic
Platelets	Not remarkably altered. Thrombocytopenia often develops late	Thrombocytopenia in majority of cases

(c) Erythrocyte Count.—A normocytic, normochromic anemia, commonly attributed to infiltration of the marrow by leukemic cells, eventually appears in almost all leukemias. The process may be macrocytic, or, rarely, hemolytic in character. Normoblasts are sometimes present in the peripheral blood in chronic myelogenous leukemia.

(d) Platelet Count.—Thrombocytopenia is a poor prognostic sign in chronic forms. It is more commonly encountered in early cases of chronic lymphatic leukemia than of chronic myelogenous leukemia. The bleeding tendency in leukemia probably results from thrombocytopenia plus leukemic infiltration of vessel walls. It should be emphasized that while attention is likely to be drawn to the abnormalities in the leukocytes in cases of leukemia, anemia and thrombocytopenia are almost constant accompaniments in the well-established chronic forms and in most acute forms of the disease.

(e) Sternal Marrow.—Improvements in the technic of aspiration of sternal bone marrow now allow almost "routine" use of this procedure. Study of sternal marrow specimens is not necessary to establish the diagnosis of leukemia when the disease is manifested by the classic hematologic and clinical signs noted previously.

The bone marrow picture in chronic myelogenous leukemia is nonspecific but is highlighted by hyperplasia and a moderate degree of left shift in the myeloid line. In chronic lymphatic leukemia more than 40 per cent of the nucleated forms are usually lymphocytes. In Schilling types of monocytic leukemia the majority of the nucleated cells in the marrow are monocytes, immature monocytes or monoblasts. In acute leukemia the marrow is packed with primitive cells. "Dry taps" are common with the needle aspiration technic in this type of case and trephining may be necessary to provide a satisfactory specimen.

Differential Diagnosis.—The diagnosis of leukemia is quite simple when the classic hematologic and clinical findings can be demonstrated. While leukemia may simulate many other disease processes in its clinical manifestations, a careful study of the blood and bone marrow usually either establishes or excludes the possibility of such a diagnosis.

Leukemia is most frequently overlooked when encountered in the aleukemic phase. Aleukemic leukemia presents all the clinical features of classic forms of the disease but the leukocytes of the peripheral blood are normal or subnormal in number. This type of leukemia is more common in lymphatic leukemia, particularly of the acute variety, and is relatively infrequently encountered in cases of myelogenous leukemia. In such cases the differential pattern is consistently abnormal, but immature forms

may be overlooked unless a painstaking search is carried out.

Chronic forms of aleukemic leukemia are commonly mistaken for cases of aplastic or pernicious anemia, Banti's disease or malignant lymphoma. The hematologist sees many cases in which aleukemic leukemia has been vigorously and fruitlessly treated with liver extract, folic acid, iron or a combination of these agents in the belief that they represented unusual, refractory forms of anemia. Acute forms of aleukemic leukemia may simulate idiopathic thrombocytopenic purpura or agranulocytosis in clinical manifestations.

However, careful study of the peripheral blood usually provides clues to the correct diagnosis and the sternal bone marrow presents the characteristic picture of leukemia as noted previously.

Leukemoid Reactions.—An erroneous diagnosis of leukemia is most often made in the presence of conditions which provoke leukemia-like, or leukemoid, changes in the peripheral blood picture. These reactions are stimulated by a variety of circumstances and diseases. For the most part, clinical similarity to leukemia is confined to the blood picture and adequate clinical observation permits differential diagnosis.

Leukemoid reactions of the myeloid type may result from the bone marrow stimulation which is a normal response to any pyogenic infection. A similar reaction may follow burns, chemical poisoning, diabetic acidosis or metastatic involvement of the bone marrow. Severe leukocytosis may accompany conditions in which an acute need for red blood cells develops. The marrow is stimulated to increased activity and as the red blood cells are poured out, white blood cells, some of them immature, are also released. This may occur in any acute hemolytic process, in pernicious anemia in crisis, following severe hemorrhage, and in some cases of polycythemia vera. In instances in which a great need for red blood cells exists over a long period, and, for one reason or another, the bone marrow is unable to meet these needs, ectopic blood formation in other organs develops. This commonly occurs in the spleen, the liver, and sometimes in the kidneys but may involve other structures. In osteosclerosis or marble bone disease, osteofibrosis, chronic hemolytic anemia, and in cases of prolonged untreated pernicious anemia, metaplastic foci of blood formation develop. Immature blood cells theoretically enter the circulation in this group of cases because of the fact that in these extramedullary foci of blood formation, the release mechanism for the leukocytes and the erythrocytes is defective and immature cells are allowed to enter the circulation along with the mature forms.

Leukemoid reactions of the lymphatic variety are

less common but sometimes more confusing. These reactions occur most often in children. It is important to remember that in children, the bone marrow reacts more readily and more vigorously to various stimuli than does the bone marrow of adults and that leukemoid reactions of all varieties are more common in the younger age group. Infectious mononucleosis may produce a picture similar to that of leukemia, but is accompanied by diagnostically specific serologic and morphologic changes in the blood. Infectious mononucleosis follows a benign course and neither anemia nor thrombocytopenia accompanies this condition. Pertussis may provoke lymphocytosis of extreme degree. The differential diagnosis depends upon recognition of the underlying disease. Occasionally lymphocytosis is seen in brucellosis, tuberculosis which is active, and congenital and secondary forms of syphilis. These are relatively rare. A confusing monocytosis has been noted occasionally in cases of subacute bacterial endocarditis.

The fairly constant association of anemia and thrombocytopenia with leukemia is a helpful point to remember. If doubt remains, study of the sternal marrow usually excludes the possibility of leukemia.

Finally, it should be remembered that leukemoid reactions are particularly common in association with infectious diseases of infancy and childhood whereas leukemia happily remains a rare disease. Consequently, the diagnosis should be made only after careful consideration of all factors.

II. Malignant Lymphomas

This term includes a group of diseases characterized by progressive enlargement of lymphoid tissue, simultaneous or subsequent involvement of other tissues and organs, and uniformly fatal termination.

The diverse manifestations and variable clinical courses provoked by these disorders are notorious and, as with the leukemias, have made accurate prognosis difficult and results of therapeutic efforts difficult to assay. In recent years, the detailed studies of Jackson and Parker¹⁻⁴ and of Gall and Mallory⁵ have provided pathologic classifications which appear to have considerable clinical usefulness, although the validity of these attempts at sharper separation of these diseases has been contested⁶. While the pathologic picture in the individual case seems to remain much the same over periods of months or years in the majority of cases, instances of inconstancy and overlapping of cell types must be anticipated. It remains difficult or impossible to distinguish the various types of lymphoma on the basis of clinical features alone.

Lymphosarcoma.—By Kundrat's⁷ definition, lymphosarcoma has been regarded as a process of unicentric origin, eventually extending metastatically by

the lymphatics, blood vessels or tissue spaces to adjacent or distant regions. However, some cases closely resemble lymphatic leukemia, a process of presumably multicentric origin, from the clinical standpoint, including the development of a leukemic blood picture. One's therapeutic strategy must be influenced by consideration of factors indicating a process of one or the other of these extremes.

The following varieties of lymphosarcoma may be considered⁵ (Table 3):

Table 3
Lymphosarcoma

Stem-cell variety	Reticulum-cell type
Clasmatocytic	
Lymphoblastic	Forms of lymphatic leukemia?
Lymphocytic	
Giant follicular	

1. Reticulum-Cell Sarcoma. (a) The Undifferentiated Stem-Cell Variety.—The average age at onset is later than in Hodgkin's disease. Enlargement of superficial nodes is the commonest early manifestation. Abdominal symptoms, often signifying gastro-intestinal involvement, were the presenting complaint in 17.5 per cent of Sugarbaker and Craver's 196 cases⁸. Involvement of the upper part of the respiratory passages (nasopharynx, tonsils) often occurs as the first manifestation of the disease. Gastro-intestinal and upper respiratory sites comprise the majority of instances of primary extranodal disease. Splenomegaly is demonstrable in approximately 21 per cent. Systemic symptoms (anemia, loss of weight and fever) occur relatively late in comparison with the same symptoms in Hodgkin's disease. The average duration of life is 1.7 years (three per cent ten-year survivals). The prognosis is better if the process begins in the upper part of the respiratory tract or if only one or two regions are involved when treatment is instituted.

(b) Clasmatocytic Variety.—The predominant cell seems relatively well differentiated in this type and exhibits phagocytic ability, simulating normal clasmatocytes or monocytes. Clinically, this form of the disease closely resembles the stem-cell variety. However, monocytosis occurred in 22 per cent and a leukemic blood picture in five per cent of Gall and Mallory's series⁵. There is little from a clinical standpoint to distinguish the latter from Schilling's histiomonocytic leukemia.

2. Lymphoblastic or Lymphocytic Lymphosarcoma.—Some authorities feel that these cases are pathologically indistinguishable from lymphatic leukemia⁹. A leukemia-like blood picture has been observed during the course of 30 to 40 per cent of cases

of this type of lymphosarcoma and under such circumstances differentiation from lymphatic leukemia is indeed difficult. Isaacs¹⁰, supported by Sturgis¹¹, expressed the belief that "lymphosarcoma leukemia" is a clinical entity and that characteristic cells are demonstrable in the circulating blood in such cases regardless of the total leukocyte count. Sturgis found the life expectancy of his 70 patients to be approximately one half that of the average patient who has chronic lymphatic leukemia (60 months).

3. Follicular Lymphoma.—This constitutes a fairly distinct pathologic and clinical entity, although it seems closely related to the lymphocytic and lymphoblastic forms of lymphoma and the terminal pathologic picture may be identical. The average age at the onset of symptoms is about 50 years. The average life expectancy (six years) is considerably better than that for the other members of the lymphosarcoma group. The process appears to be more closely confined to the lymphoid tissues in the early stages, systemic manifestations are less striking and the response to treatment is more gratifying. The spleen is palpable in approximately 60 per cent of cases at some time during the course of the disease. The retroperitoneal nodes are commonly involved and the development of chylous ascites is not unusual¹².

Hodgkin's Disease.—This has been separated into three principal types by Jackson and Parker¹⁻⁴ (Table 4).

Table 4
Hodgkin's Disease

Paragranuloma—relatively benign process. Cervical adenopathy often only symptom. Long survival. 20% progress to granuloma.

Granuloma—classic type (90%). Slowly progressive course with prominent nodal involvement, early systemic manifestations, and variable local symptoms.

Sarcoma—behaves as true neoplasm, with symptoms suggesting rapidly progressing, malignant disease of internal organs. Superficial adenopathy absent in 50%.

1. Paragranuloma.—The paragranulomatous form bears little resemblance to usual neoplasms either in its histologic picture or in its clinical course. Cervical or axillary adenopathy may be the only clinical or pathologic manifestation of the disease. Most patients have survived for long periods after surgical extirpation of, or aggressive roentgen radiation administered to, the involved nodes, but approximately 20 per cent have progressed to develop the characteristics of the granulomatous variety.

2. Granuloma.—The granulomatous type, with an average life expectancy of two to three years, is the classic variety of Hodgkin's disease. The process

may and does involve any organ in the body containing lymphoid or reticulo-endothelial tissue. Consequently, enlargement of superficial nodes may be only external evidence of established disease in the interior. Systemic reaction, in the form of fever, loss of weight, weakness or malaise, usually develops relatively early, followed or accompanied by various evidences of local distress resulting from the pressure of enlarging nodes or organ infiltrations. Intrathoracic, cutaneous and osseous involvement is particularly common. While patients frequently complain of abdominal pain this seems to result from retroperitoneal more often than actual gastro-intestinal involvement. Eosinophilia occurs at some time in about 20 per cent of cases and monocytosis is frequently observed. Anemia develops much earlier than in cases of lymphosarcoma.

3. Sarcoma.—Hodgkin's sarcoma is a highly malignant process from the pathologic point of view, which presents symptoms suggesting involvement of internal organs (retroperitoneal nodes, gastro-intestinal tract and respiratory system commonly involved) accompanied by the systemic evidences of a rapidly progressing malignant disease. Significant superficial lymphadenopathy may be present in only 50 per cent of cases. This type of Hodgkin's disease occurs in an older age group (sixth and seventh decades) and carries a life expectancy of about six months although the original response to treatment may seem encouraging.

Differential Diagnosis.—While malignant lymphoma may simulate a great variety of diseases, the following conditions most often cause diagnostic difficulty.

1. Lymphadenopathy Secondary to Local Inflammatory Disease.—This should subside as the primary process clears up. If enlargement of nodes persists for more than two to three weeks without obvious explanation, biopsy should be performed.

2. Leukemia.—In the forms of lymphoma presenting a leukemic phase differentiation may be extremely difficult. Usually, careful study of the blood and, when necessary, the bone marrow, establishes the diagnosis of leukemia.

3. Tuberculous Adenopathy.—If acute in development, tuberculous glands may remain discrete and movable. Tuberculosis more often involves the submaxillary and anterior cervical nodes while Hodgkin's disease may often affect the posterior cervical chain. The demonstration of calcification in enlarged lymph nodes favors the diagnosis of tuberculosis.

4. Metastatic Carcinoma.—Biopsy is usually necessary for differentiation if the site of the primary lesion is obscure. Nasopharyngeal tumors are often

small and easily overlooked and the first symptom of such disease may be the development of marked cervical adenopathy.

5. Syphilis.—The nodal enlargement of syphilis is rarely marked. If a primary lesion is not apparent, serologic studies provide the correct diagnosis.

6. Infectious Mononucleosis.—This has a benign clinical course and occurs in younger age groups. Diagnostic serologic and morphologic changes are demonstrable in the blood.

7. Boeck's Sarcoid.—This condition may very nearly duplicate Hodgkin's disease from the clinical viewpoint. However, the lymphadenopathy rarely attains large proportions and often involves the preauricular and postauricular, submental, submaxillary and epitrochlear groups. Paratracheal adenopathy is characteristic. The uveal tract is frequently involved and small "punched-out" lesions are often demonstrable on roentgenographic examination of the bones of the hands and feet. The serum protein level is usually high and the tuberculin skin reaction is negative.

8. Other Conditions.—Unless nodes or tissue accessible to biopsy are involved, it may be practically impossible to differentiate lymphoma from other conditions causing mediastinal tumor, abdominal tumor or bony lesions. In most instances, an accessible lymph node can be uncovered sooner or later. The so-called therapeutic test with roentgen therapy is sometimes carried out but should be considered only as a last resort.

9. Disseminated Lupus Erythematosus.—This provides a picture sometimes grossly similar to that of malignant lymphoma but the degree of lymphadenopathy is seldom marked and evidence of cardiac or renal involvement is usually apparent. Recently Hargraves and his associates¹³ have demonstrated the existence of a specific cellular element in the bone marrow in clinically "active" cases of disseminated lupus erythematosus.

Diagnosis.—It remains established that the positive diagnosis finally depends on the demonstration of the characteristic histopathologic picture in involved lymphoid or other tissue.

Material for study is most commonly and satisfactorily obtained by excision of an involved superficial

node. Cutaneous lesions may also provide satisfactory material for microscopic study.

Aspiration biopsy of involved enlarged hematopoietic structures, the liver and other organs and tissues has been carried out with occasionally satisfactory results, but the hazards attached to such procedures may be appreciable and the material obtained is often unsatisfactory for definite diagnosis.

In view of the very high percentage of cases of Hodgkin's disease in which bone and bone marrow lesions are observed at necropsy and the similar though less frequent occurrence of bony lesions in other members of the malignant lymphoma group it was hoped that study of aspirated bone marrow material would provide another simple means of establishing a positive diagnosis of malignant lymphoma. While material of diagnostic value is obtained in rare instances by this method, the findings in the overwhelming majority of instances are disappointingly nonspecific. The usually focal character of the process accounts for this difficulty and the employment of multiple sites of aspiration might result in a higher percentage of positive results¹⁴.

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Diagnosis and Treatment of Endometrial Cancer

Herbert E. Schmitz, M. D.

Chicago, Illinois

Probably the greatest step forward in the diagnosis of endometrial cancer is universal recognition of the established fact that this type of malignancy can occur during the active menstrual life of an individual and need not necessarily cause irregular menstrual bleeding.

This recognition was influenced by the work of Randall in his study of a large series of endometrial carcinoma cases in which he tried to divide the cases into first, postmenopausal bleeding; second, metrorrhagia; and third, no apparent alteration in the menstrual period except an increased flow. His conclusion was that the woman 40 years of age or over who has an alteration of her menstrual flow, either prolonged or increased in amount, has a higher incidence of malignant disease of the endometrium by at least 10 per cent. This was so in the cases that were complicated by benign disease, myomata, etc. Therefore, we began to recognize the fact that when the menstrual flow was altered we had better investigate. We had always admitted that in all probability postmenopausal bleeding was indicative of malignant disease, or that irregular bleeding occurring in between the periods of regular menstrual flow was also indicative of disease.

The economic situation, of course, forbids that all of these patients be hospitalized for curettage. We must very carefully screen them clinically in order not to overlook the group with the 10 per cent incidence where the normal incidence runs somewhere in the neighborhood of three per cent. This brings up the question of other diagnostic procedures such as the smear, the cytologic study, or aspiration curettage. I have always hesitated to admit as positive proof a negative aspiration curettage, the so-called office or clinic procedure, for fear that the curettement had not removed all areas of the endometrium. With such a fine instrument as a Novak or a Randall curette, I can conceive that it is very possible to miss entirely the site of malignancy.

We, therefore, have compromised by admitting these patients into the hospital in the morning and, under sodium pentothal anesthesia, performed a thorough curettage and sent them home by three or four o'clock the same afternoon. In this way it is possible to handle a large number of patients without clogging up the beds in the hospital. This is a relatively safe procedure because it has been done over a period of some 10 years without any complication and is certainly much more reliable than

any other form of curettage, or any diagnostic substitution that I have mentioned.

The Papanicolaou technique of cytologic study certainly has its place in a well developed and well staffed clinic. It cannot be used as a generalized screening process for all women 40 years or over because, as you were told yesterday, it would be impossible to have a sufficient number of trained cytologists to even screen the slides before they are passed on to the pathologist for an opinion. Therefore, this technique is used in those patients where the curettage is negative and where the answer to the increased menstrual flow or the irregular bleeding is not forthcoming. In such cases, the number of which is relatively small, I believe that this procedure has a definite place and is an excellent addition to our diagnostic acumen.

By performing these curettages we are beginning to uncover in the endometrium changes which are similar to the pre-invasive carcinomas now being described and recognized in the cervix. Novak in his recent publication has demonstrated changes in the adenomatous structure of the endometrium which he interprets as pre-invasive carcinoma of that tissue, and I believe sincerely that before long we are going to have sufficient experience to begin to talk about pre-invasive carcinoma of the endometrium.

With the diagnosis in our hands, how are we going to proceed in the treatment of this condition? About 1935 we published a procedure for the radiologic treatment of endometrial carcinoma, developed primarily for those patients who were not considered surgical risks, having such conditions as thoracic complication, cardiac complication, severe diabetes, or other diseases contraindicating operation. From a study of the literature it is shown that about 20 per cent of patients having proven endometrial carcinoma treated by irradiation survived over the five-year period.

If adenocarcinoma of the endometrium were diagnosed early, then properly and thoroughly treated, it might be possible to duplicate the same end results being obtained in the treatment of squamous carcinoma of the cervix. Such a radiological procedure has been carried out for a time in a group of fundal malignancies and the uterus was surgically removed in order to obtain the specimens for pathological study. Figures 1 to 6 demonstrate our clinical idea as to the extent of disease and the grouping of fundal or endometrial carcinoma.

Figure 1 is an extremely early lesion where the cancer has not as yet broken through into the uterine cavity, a condition which oftentimes exists and which we are likely to miss with the curette. The uterus has not been altered as to size or shape, and there is no alteration in its consistency. This we classify as a clinical Group I carcinoma.

Figure 2 shows that the lesion has broken through the uterine wall and is showing distinct growth tendencies. It is infiltrating as well as proliferating. There is no question but that there is further migration of cellular elements, and this is called a clinical Group II.

Figure 3 demonstrates another Group II lesion, traveling down along the endometrial surface, invading into the myometrium but still causing no alteration in the size of the uterus itself. Now, you may ask me how you can group these cases clinically without visualizing the extent of the disease. This is based on the findings of the clinical examination, the bimanual examination which determines the size, the mobility and the consistency of the uterus and the findings with the curette. If, with one sweep of the curette at say six o'clock on the dial, we remove some friable necrotic material and nowhere else around the cavity is any found, then

we are quite sure that in all probability a very small localized lesion exists.

Curettage should always be done, as I shall show you in a moment, in two distinct divisions, the first being curettage of the endocervix and the second curettage of the uterine cavity itself. The reason for such a distinction being made is that an adenocarcinoma of the cervix could be misinterpreted if the curette were placed in the endometrial or the uterine cavity and withdrawn. Such tissue could be delivered without recognizing that the friability of tissue didn't take place until you passed the internal os of the cervix. This would then probably be misinterpreted as a carcinoma of the endometrium, when actually it is an adenocarcinoma of the endocervix.

Figure 4 is a clinical Group III where there is extension along the endometrial cavity. Friable necrotic tissue is obtained with the curette almost the entire way around the uterine cavity. There is thickening of the wall of the uterus because of the edema, plus an irregularity and slight enlargement. As yet there has been no palpable extension beyond the uterus into the parametrial tissues.

Figure 5 shows a more proliferating mass, descending to the endocervix and at times erron-

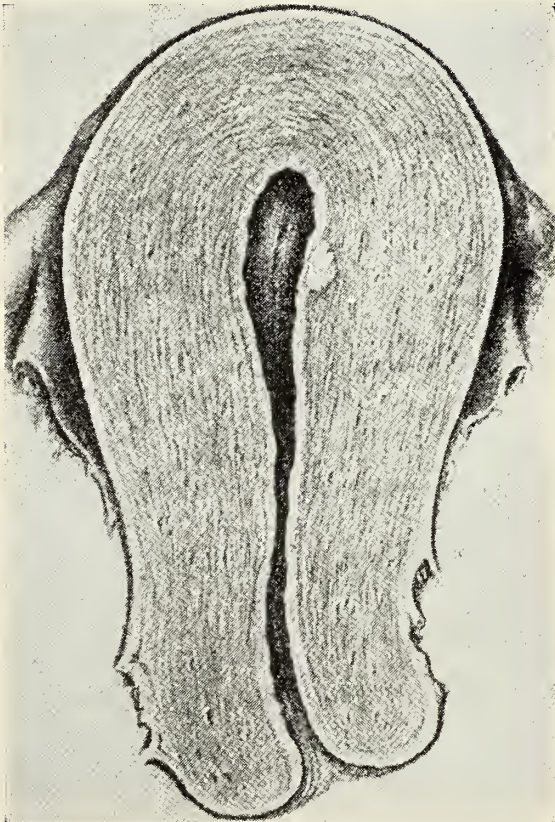


Figure 1.

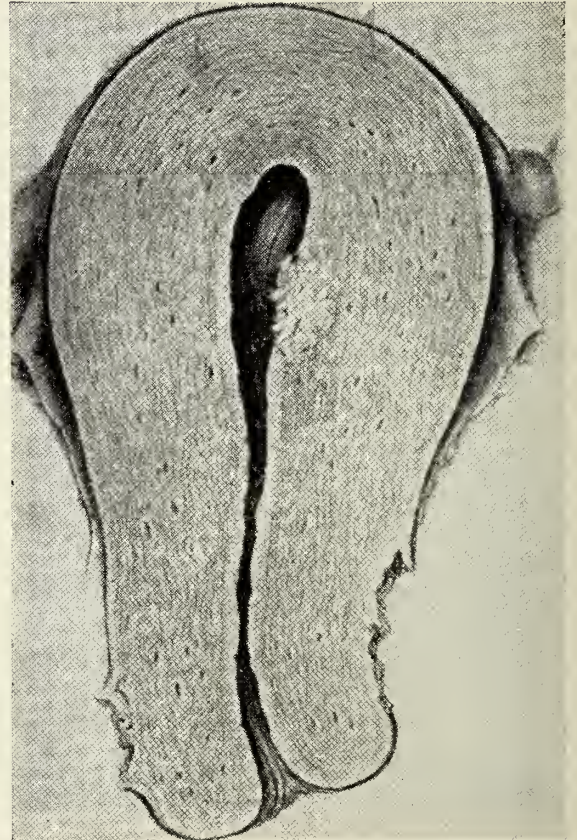


Figure 2.

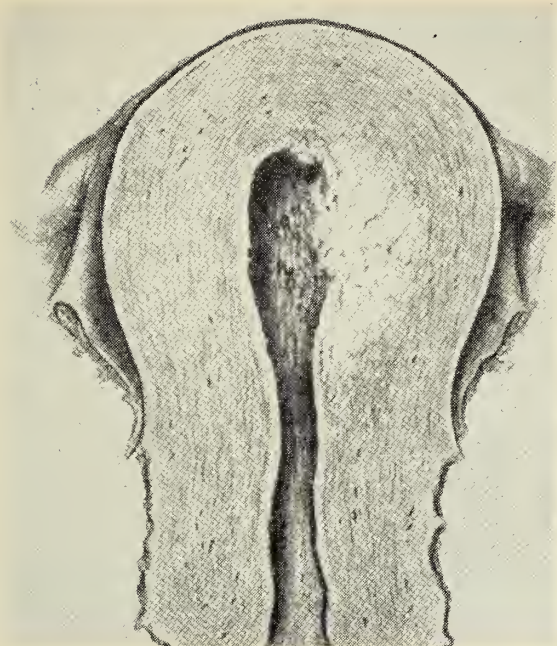


Figure 3.

ously diagnosed because of the visualization of tissue or bleeding from the cervical canal on probing, as an endocervical lesion when it is truly an endometrial lesion.

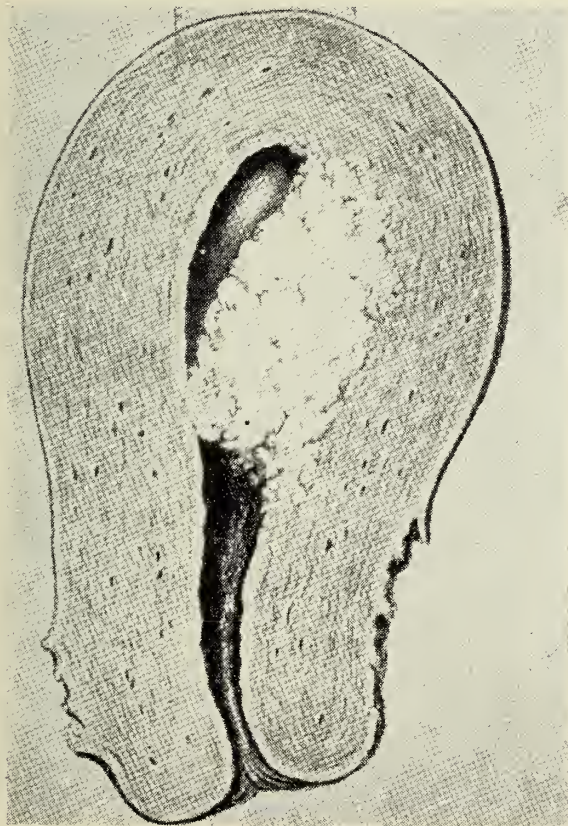


Figure 4.

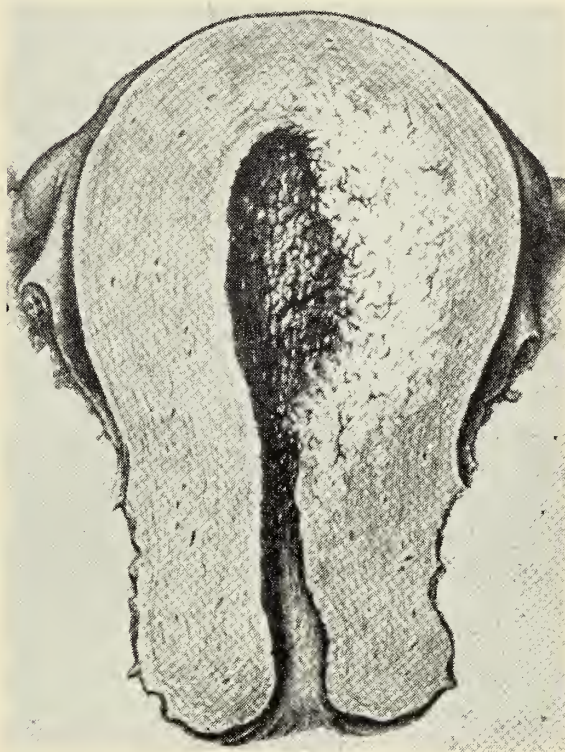


Figure 5.

All patients who present themselves for treatment are accepted in a statistical study. The curability rate in these individuals, figured on a five-year period of arrest, is extremely low. All of the previous series reported in the literature embody all of these cases. Some of them are irradiated palliatively in order to control the discharge or the bleeding or to try to relieve some of the pain and



Figure 6.

Figure 6 illustrates a Group IV case where there is extension well out of the uterus. This, of course, is a far advanced carcinoma which has invaded the entire myometrium, broken through the perimetrium posteriorly and invaded the lymphatics of the pelvis and the broad ligaments. These illustrations have shown the clinical groupings of endometrial carcinoma so important for statistical studies.

the discomfort of the individual, and naturally they must be included.

If, however, we are going to exclude these far advanced cases and take the earlier group and irradiate them, we are going to be surprised in the difference of the end result.

All of these cases admitted into our clinic were studied in the following manner. In the first place an instrument (the uterometer, Figure 7), was used to determine the width of the cavity in the fundus of the uterus. These measurements were recorded. Then using a Y radium capsule (Figure 8) which has been reported previously, we should get a uniform and homogenous distribution of our radium irradiation within the

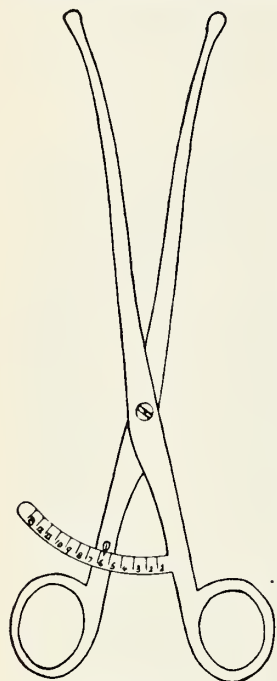


Figure 7.

uterine cavity. In an early lesion within the uterine cavity only the upper portion of the stem is loaded with radium. By measuring the patient very carefully we are able to figure the depth dose through

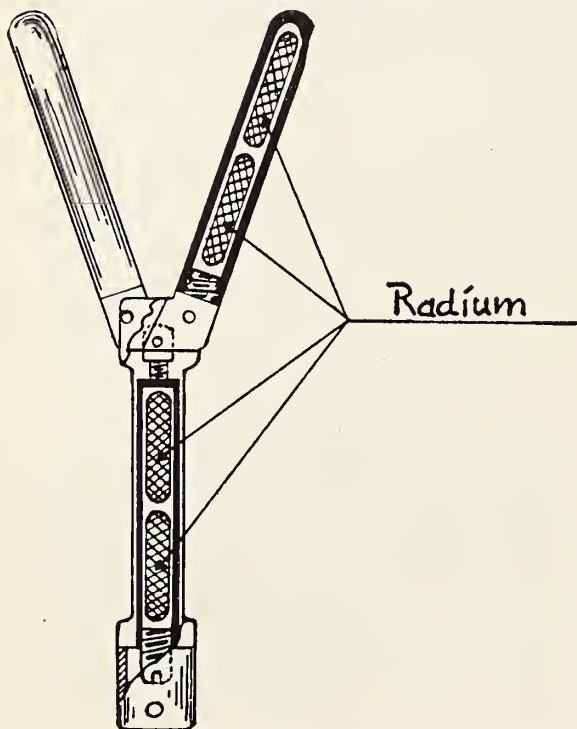


Figure 8.

the tumor and figure an accurate depth dose from our external source of irradiation. Thus we administer to these patients 6000 mgm. hours of radium within the uterine cavity and 4000 R units of x-ray within the tumor. Six to eight weeks following this procedure we remove the uterus and the adnexa so as to recover these irradiated specimens.

In a summary of our cases it has been found that in the early superficial carcinomas of the endometrium we have been successful in destroying the carcinoma. Yet, it didn't mean to us that the treatment of endometrial carcinoma is irradiation therapy; it did mean that there is some definite effect and, therefore, it probably is of value as a preoperative measure. There have been others reporting since that time on preoperative irradiation with x-ray, and some with radium. I believe that ours is the only series that has a combination of x-ray and radium followed by surgery. The reason that I bring this out is that one is constantly questioned as to the reason for preoperative irradiation if he is going to remove the entire uterus. If you stop to think for a moment, you will immediately realize that the majority of your endometrial carcinomas succumb from distant metastases to the brain and the lung, not to direct extension within the lymphatics of the pelvis themselves. I'll grant that there are recurrences in the vault of the vagina; I'll grant that there are recurrent masses in the floor of the pelvis, but most frequently the poor end result is due to the distant metastases, which in all probability are blood stream metastases.

An interesting observation has been made that when we got into what we considered clinical Group II or clinical Group III where there was extensive infiltration into the myometrium, there was still active disease. It wasn't entrapped cellular elements, which might at a later date again undertake active mitosis and migration, but there was active disease remaining. We realized immediately that unless you had a very superficial lesion, irradiation itself, even although it be as extensive as this, was inadequate for the treatment of endometrial carcinoma. However, we were not convinced that it was not of some benefit as a preoperative measure. In order to satisfy ourselves of that, it was necessary to demonstrate some effect on the tumor which would in some way or other justify the procedure.

The first thing that we noticed in all of the uteri, after they were cut and divided into blocks so that the entire uterus could be studied for residual disease, was that the entire endometrium and the inner surface was replaced by a heavy hyaline block of tissue. The endometrium itself had completely sloughed out with probably five mm. of myometrium and was replaced by a very white glistening hyaline block of tissue throughout, with

very little change deeper in the myometrium.

The appearance of tumor tissue under the effect of the irradiation itself shows a very damaging and distinct effect. The interesting thing is the effect of this irradiation on the walls of the vessels and the vessels themselves. There is a fibrin layer folded up into the lumen completely closing it with hyaline infiltration, with edema of the intima, and the media shows throughout the so-called foam cells forming almost complete obliteration. Where is this fibrosis that we talked about following irradiation in the myometrium? It isn't there. That is a late manifestation of irradiation, not evidenced within 12 weeks to three months. So we began to realize that in all probability these changes within the walls of the vessel, the destruction of the superficial carcinoma of the endometrium, was the thing that was of value.

There should be less chance of spill with implantation into the vagina or implantation into the pelvis. There should be less chance of migration of tumor cells during the operative procedure because

of the obliteration of vessels. We have carried on this work for a number of years now and have found that our over-all survival in carcinoma of the endometrium has increased to 50 per cent, including the case that comes in moribund, the case that comes in terminal, where palliative irradiation is utilized, and this group of cases. If we select those patients that had the superficial endometrial carcinoma, where there was no evidence of the disease left following the procedure of irradiation, we find that we are accumulating a group of patients with an 80 per cent five-year survival which is a distinct improvement over our previous end result.

It may be that our operative technique has improved, or it may be that we are finding more of these patients at an earlier stage of the disease. All of those things must be taken into consideration, but we still feel that with those factors being considered and being evident in other statistical studies, we eventually will display a higher survival rate because of this preoperative irradiation.

The Diagnosis And Treatment Of Cancer Of The Cervix

W. Walter Wasson, M.D.

Denver, Colorado

In this conference on cancer we now come to another battle ground in the diagnosis and treatment of cancer—cancer of the cervix. The title of this paper limits the discussion to cancer of the cervix, but there can be no discussion of cancer of the cervix without rather general consideration of the entire female pelvis.

The Approach to the Diagnosis of Cancer

The approach to the diagnosis of cancer of the cervix must be made with a great deal of respect and with the same care and planning as that for any major operation. We must approach it with respect primarily for the difficulty in diagnosis. Too often under the pressure of a busy office or clinic insufficient time is given to the consideration of the stage and grade of involvement and the procedures necessary for the removal or destruction of the cancer.

Each stage of involvement requires a different approach for the best results. No one routine technique of irradiation or surgery can be correct for all types and stages of involvement. Insufficient emphasis has been put upon this by many physicians, not excluding the author. Because cancer of the cervix is

in a very strategic position to involve not only the uterus but also the floor of the bladder and rectum, and because it so often presents itself so frankly, and the diagnosis is made so easily, the surgeon or radiologist may proceed with his treatment without due consideration of the possibility of more extensive involvement than is apparent upon the first examination.

Anatomy of the Female Pelvis

Of primary importance is an intimate knowledge of the anatomy of the female pelvis, of the sites for beginning cancer, and of the method of dissemination of cancer. Looking into the pelvis from above, we find the uterus in the midline, the lymphatic chains which extend out to the ovaries, and the ovaries which as a general thing lie well out toward the perimeter of the pelvis (Figure 1). With extension from the cervix into the broad ligaments there is involvement of the ovaries and of the lymphatics.

The anatomical structures involved lie almost entirely within the birth canal (Figure 2). While the canal possesses known variations in size and shape it is, in general, a short cylinder in the center of which are the bladder, uterus, and rectum and

some intestinal viscera and the lymphatics, while near the outer walls are the ovaries and numerous lymph nodes. Surrounding this birth canal are the bony pelvis and its muscles and ligaments, and external to the bony pelvis are the structures of the thighs, buttocks, and abdomen. There is a chain of lymphatics extending outward from the uterus into the ovaries and upward along the great vessels as high as the kidneys and of course, on up into the mediastinum (Figure 3). Anyone attempting to treat or remove cancer of the cervix must give careful consideration to the extent of the involvement of the pelvis. Even in an apparently first or second

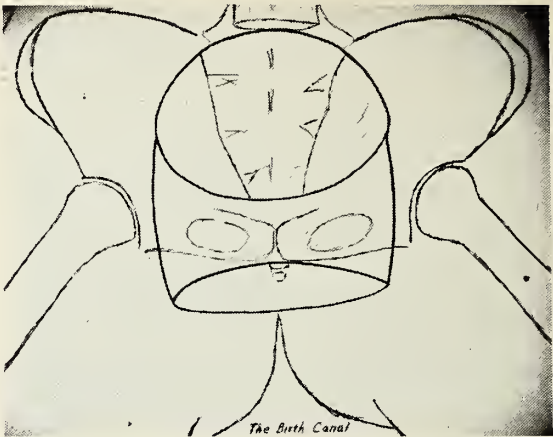
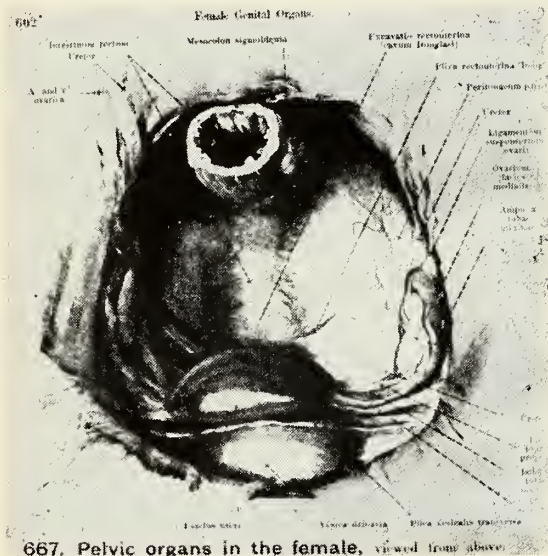


Figure 2. Birth canal which contains all the structures immediately involved from cancer of the cervix.



667. Pelvic organs in the female, viewed from above

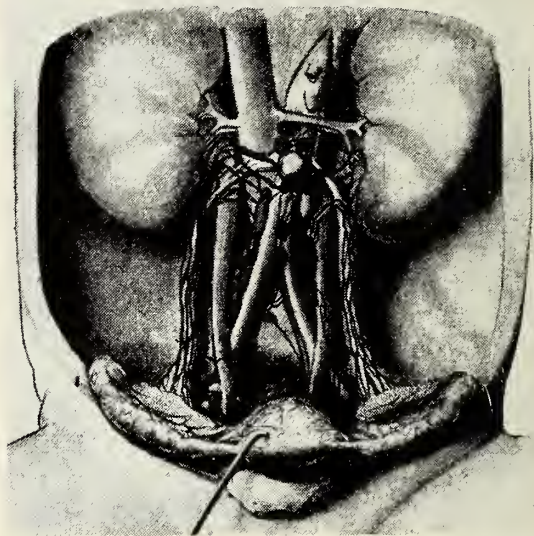
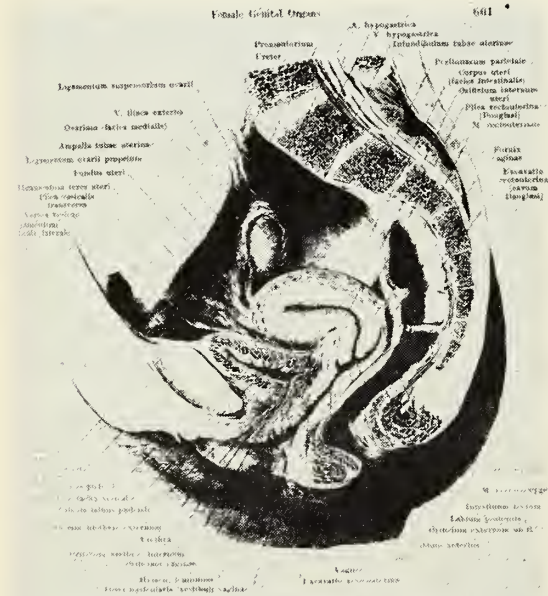


Figure 3. Lymphatic channels extending from pelvis into the upper abdomen. (After Bartels).



666. Median section through the pelvic organs in the female.

Figure 1, A and B. Anatomy of the female pelvis as viewed from above in A; and in median section in B (after Spalteholz.)

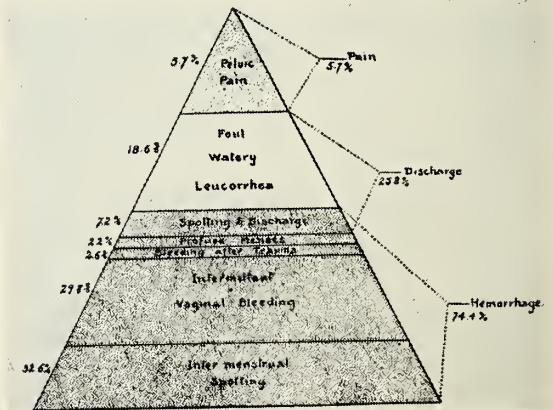


Figure 4. Diagram of symptoms of cancer of the cervix and uterus. (After Clark and Ferguson).

stage cancer of the cervix, the cancer cells may already have passed into the lymph nodes along the lateral walls of the pelvis, or as Dr. Herbert Schmitz just stated, the cells may be already lying in the lymphatics and ready to be squeezed into the lymph channels and transported to some distant part of the body, and thereby account for some of the failures of surgical operations or radiation therapy. I have had losses in treating cancer of the cervix, not because of the involvement of the uterus or the cervix itself, but because of the breaking down of a gland out along the perimeter of the pelvis, and along the bony canal. My attention had been directed too much to the involvement in the uterus and cervix. Therefore, knowledge of the female pelvis should be our first consideration.

Clinical History

The first approach to a diagnosis of cancer of the cervix is a well-taken clinical history of the patient. The age and state of health of the patient are important factors in determining the type of treatment the patient should have. Cancer of the cervix in a young girl is quite a different problem from that of cancer of the cervix in the older woman. Again, the pelvic symptoms often give clues to the extent of involvement of the cancer. Bleeding is one of the early signs but not necessarily the first evidence of cancer of the cervix. It may be associated with the menstrual period or it may be spotting between periods, or it may be a little blood that appeared after sexual intercourse. A vaginal discharge may be an even earlier symptom, or at times there is neither bleeding nor a vaginal discharge, and the cancer is found only by accident. The menstrual periods may or may not be irregular. The vaginal discharge when present is a very important sign both as to its character and its times of appearance. A watery, purulent or semipurulent discharge coming from the cervix nearly always means an extension of a cancer into the body of the uterus. Such a discharge is not common to the female. An irritation of the bladder or rectal pain may indicate extension into these organs. Pain is not a common finding: according to one author it is only present in 5.7 per cent of cases of cancer of the cervix (Figure 4). The examination of the patient must be done carefully and without undue trauma to the cervix or pelvic organs. Often the cancer cells may be lying free in the lymphatic channels ready to be displaced into the neighboring lymph nodes by undue bimanual pressure. A careful inspection of the cervix is an absolute requirement, and yet many patients have stated to me that the attending physician only did a bimanual examination.

The Examination

Sometimes cancer of the cervix is entirely silent,

and it is found only by an accidental examination. As a matter of fact, every woman should have frequent examinations, and often when she is in the office for other purposes an examination of the pelvis is not a bad procedure. Beside the routine bimanual examination there are a number of laboratory and technical aids. In the examination of the cervix, many *stains* have been devised for application to the cervix, but these stains have not met with any great success. The making of a *biopsy* by taking a section of the cervix is still the method of choice, but this section may not be taken in the right location, and it may not extend high enough into the cervical canal. A modification of the biopsy method of diagnosis is the method devised by Papanicolaou which has been discussed in detail by other speakers in this conference. By this method, only a few cells are necessary for a positive diagnosis. A small curette may be safely passed into the cervical canal for the removal of tissue or cells high in the canal. Cancer of the lips of the cervix has a great tendency to progress upward along the cervical canal and is often the pitfall for either the surgeon or the radiologist. In other words, a simple inspection of the cervix with even a removal of a portion of one of the lips of the cervix is not sufficient. An examination of the cervical canal should always be made in the early stages of cancer of the cervix. A section of the lesion should be taken as they are not all malignant. Also, a curettage of the uterine cavity may be necessary in the later stages of cancer of the cervix in order to determine the extent of the malignancy. An x-ray examination of the chest for metastases is also an excellent procedure in the later stages of cancer of the cervix.

Another method for the examination of the cervix

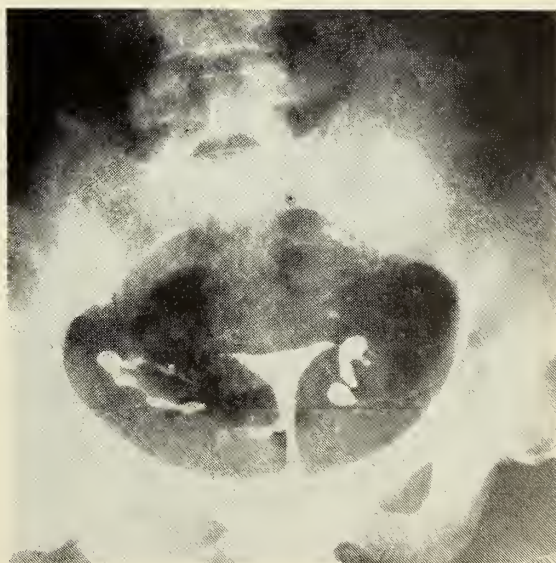


Figure 5. Lipiodol injection of normal cervical canal and uterus.

and the uterus is the *lipiodol injection* and a roentgenogram of the cervical canal and uterine cavity (Figure 5). The lipiodol injection will often reveal an unsuspected dilatation of the cervical canal or an extension of the cancer into the uterine cavity (Fig-



Figure 6. Lipiodol injection of cancer of the uterus.

ure 6). I have seen cases in which lipiodol injections were of definite help. I've even seen cases in which able gynecologists passed over with the curette a malignancy of the uterine cavity which was demonstrated by a lipiodol injection. I have disclosed small ulcers in the uterus which were no more than one cm. in diameter. On the other hand, lipiodol injections do not seem to be very popular. I am not sure as to the reason for this unless we have more con-

fidence in the curette than we do in the lipiodol injection.

Discussion of the First Stage of Cancer

Now that we come to the stages of involvement of cancer of the cervix, I wish to pay respect to Dr. Henry Schmitz, the father of the preceding speaker. Dr. Henry Schmitz is responsible for the excellent basic illustrations which appeared in *Surgery, Gynecology and Obstetrics* in 1930, and which show the various stages of involvement. The *first stage* of cancer of the cervix, according to Dr. Schmitz, involves one lip, an area of about one cm. in diameter (Figure 7). In this type of involvement it is not satisfactory to simply look in and see an ulcerated area on the lip of the cervix. We must separate the lips of the cervix and explore as to how far this involvement may extend along the cervical canal. A small curette should be passed along the cervical canal to determine if there is still further involvement. Any tissue removed should be turned over to the pathologist for examination. If the internal os is open, that again is a bad sign. In one such case, due to the fact that I did not recognize that the simple cancer of the lip of the cervix was not limited to the lip of the cervix itself but extended along the cervical canal into the uterus, my treatment was not directed adequately to take care of this extension into the body of the uterus. Of course, the patient did not get well. In first stage cases, there must always be a gentle bimanual examination. There is no occasion for a rough examination.

When the biopsy has been taken, and the *biopsy is positive*, then the next question is: "What will be our next step?" Of course, this is all done in consultation, and consultants do have something to offer in determining the method of the removal of the cancer. Will it be surgery? Will it be radiation therapy? These are the two methods that are available for treatment.

I have no quarrel with the surgeon who wishes to remove the cervix and the uterus in this stage of involvement. It certainly has its advantages. It gives us the opportunity to examine the uterus and cervix afterward to see if we made a mistake in our approach to the case. Perhaps it is a more extensive involvement than we realized; perhaps the patient should have subsequent radiation therapy. On the other hand, I do like to have radiation therapy preceding the hysterectomy, not radium placed in the cervical canal, but intravaginal radiation therapy. Radiation treatment preceding hysterectomy offers no particular handicap to the surgeon and may overcome some of our errors in diagnosis.

Supposing that the section comes back negative. What are we going to do then? That is the problem that we must frequently face. Shall we do surgery?

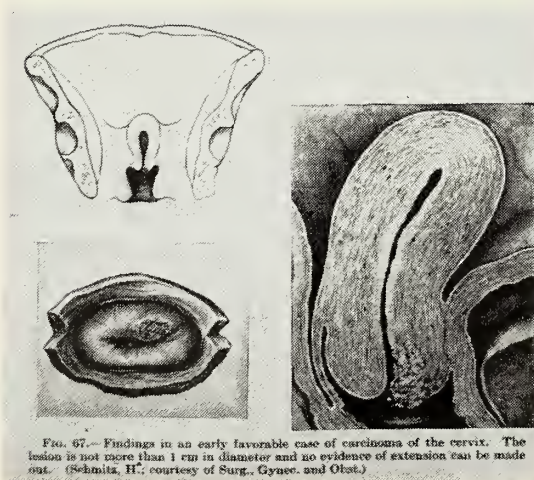


FIG. 67.—Findings in an early favorable case of carcinoma of the cervix. The lesion is not more than 1 cm in diameter and no evidence of extension can be made out. (Schmitz, H., courtesy of Surg., Gynec. and Obst.)

Figure 7. Cancer of the cervix, Stage I. (After Schmitz).

Shall we have radiation therapy? Or shall we keep the patient under observation? Certainly, we are not justified in dismissing the patient and sending her home. At least, she must be kept under observation and if this ulcer, this inflammatory condition of the cervix, does not disappear, in my opinion, the patient is entitled to an operation. It may be much safer to remove the uterus and cervix surgically than subsequently to attempt to remove a cancer of the cervix with all of its attending hazards. At the time of operation, the pathologist can make a more complete study of the specimen than is possible at the time of the ordinary first examination. In these cases of inflamed cervixes, if surgery is contraindicated by the condition of the patient, radiation therapy can be instituted with good results. The inflammatory conditions of the cervix and uterus do respond to radiation therapy without subsequent cancerous involvement. The observation of a patient with a dangerously inflamed cervix may require considerable time on the part of the attending physician, but the patient will be very appreciative, and a high percentage of cancer of the cervix will be avoided. The first stage of cancer of the cervix can also be cured by radiation therapy.

Discussion of the Second Stage of Cancer

The *second stage* of cancer of the cervix is that

therapy plus intravaginal irradiation. Then the next decision we have to make is, are we going to do surgery? If we are, then perhaps radium into the cervix and uterus is unnecessary. Again, I think this is a debatable point, and I'm willing for the surgeon to operate this case after I have done adequate radiation therapy and waited for the right interval of time as Dr. Schmitz showed in cancer of the endometrium. I'm not so sure but that we may salvage a little higher percentage of our patients by so doing. If there are contraindications to surgery, then radium should be placed not only in the cervix but in the uterine cavity, because again, perhaps we are overlooking the possibility of extension into the uterine cavity. Intravaginal irradiation of the entire pelvis must be given, and that irradiation must be uniform throughout the pelvis as well as external irradiation. By such radiation therapy the second stage of cancer of the cervix can be cured.

There is also another type of cancer which is not too frequently, but occasionally, seen in which there is very little piling up of tissue at the cervix and in which there are red inflamed spots over the vaginal vault. I think of it as an inflammatory type of carcinoma. It involves the vaginal canal, and for it certainly surgery is not indicated.

Discussion of the Third Stage of Cancer

The *third stage* of involvement of cancer of the

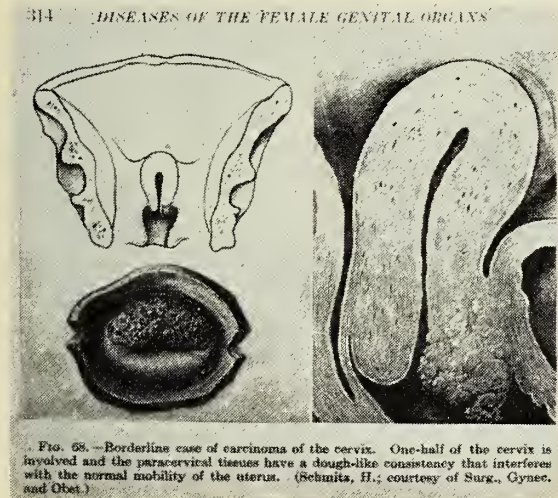


Figure 8. Cancer of the cervix, Stage II. (After Schmitz).

in which the involvement is practically the entire body of the cervix (Figure 8). In these cases there is more apt to be an extension into the lymphatic channels, and again, perhaps extending into the body of the uterus. After careful examination what shall be the next step? In my opinion, this should be radiation therapy—radiation therapy because of the likelihood of the extension into the lymphatic channels and parametrium. If radiation therapy is given, it should be adequate. It should be external radiation

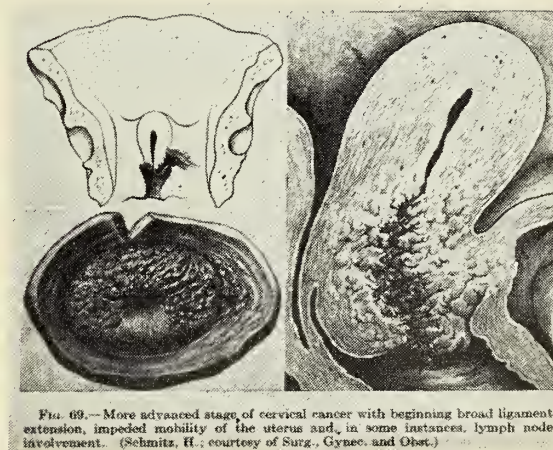


Figure 9. Cancer of the cervix, Stage III. (After Schmitz).

cervix is that in which the uterus is involved and also the parametrium (Figure 9). In my opinion, the first approach after proper diagnosis and recognition of the fact that glands in the broad ligaments are involved is that of radiation therapy—radiation therapy applied intravaginally, externally, and with radium in the cervical canal and in the uterus. The case should be followed very carefully. If there is proper response, if it looks as though by this method the patient may get well, then the

radiation therapy should be repeated. If in the judgment of the radiologist there is a possibility that this patient may not be cured, then she should be submitted to surgery. Frequently, patients come in with complete ulceration of the entire vaginal vault. Only recently, I saw two such cases. Why any woman will allow herself to get into that condition or why her



FIG. 10. Advanced stage of cancer, stage with fixation of uterus from broad ligament extension, invasion of the rectum and bladder and metastases in the regional lymph nodes and sometimes in distant organs. (Schmitz, H.; courtesy of Surg., Gynec. and Obst.)

Figure 10. Cancer of the cervix, Stage IV. (After Schmitz).

attending physician will not recognize it, I do not know.

Discussion of the Fourth Stage of Cancer

The *fourth stage* is that with extensive involvement of practically all of the structures in the pelvis (Figure 10) and frequently with metastases to some distant portion of the body such as the lungs. For these patients, radiation therapy can offer nothing more than palliation. But 25 years ago, these same patients would lie in bed with a foul discharge soaking the bed, utterly, utterly miserable! Now at least, as the result of combined methods, such misery does not exist. Radiation therapy alone gives relief so that these patients may die reasonably comfortably; or perhaps Dr. Brunschwig will contend that surgery is able to do still more. As far as I am concerned, I can give no more than palliation, and I am delighted to have the surgeon take over such patients.

Intravaginal Radiation Therapy

One of the newer methods of radiation therapy is intravaginal radiation therapy, on which my associates and I reported in detail^{1, 2, 3}. There are those who say that this method is too meticulous, too time-consuming; but I reply that if we are not willing to be industrious we should not attempt to treat cancer. Again, there are those who use the single cone method; I use the multiple cone method in order to get more complete uniform irradiation throughout the pelvis³ (Figures 11 and 12).

The Follow-Up

The *follow-up* of the patient who has been treated for cancer of the cervix is of the greatest importance. Frequently, there is some recurrence following surgery which may be successfully treated by radiation therapy. Also, there may be those complications of infection and necrosis of the vaginal vault from radiation therapy which require observation and treatment. The follow-up examinations should be every two weeks or more often following any one of the methods for the removal of the cancer. Only after considerable time should the interval be extended to one or two months. Examinations at six-months intervals are of no value to the patient and are only of value in compiling statistics of five-year cures. In other words, there is no substitute for industry in the treatment of cancer of the cervix.

Complications

As previously stated, one of the most common

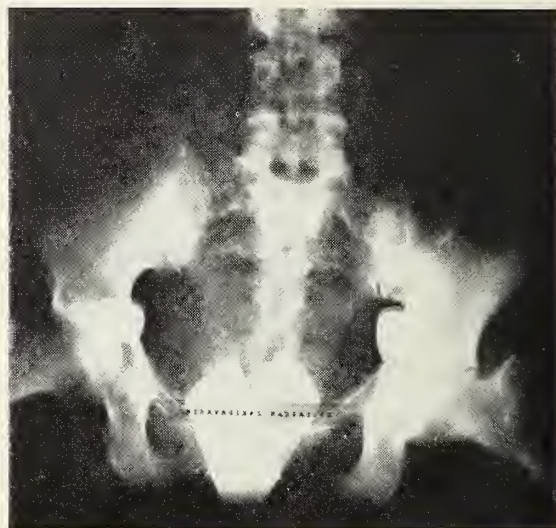


Figure 11. Roentgenogram illustrating the angles of the treatment cones which may be had in intravaginal irradiation.

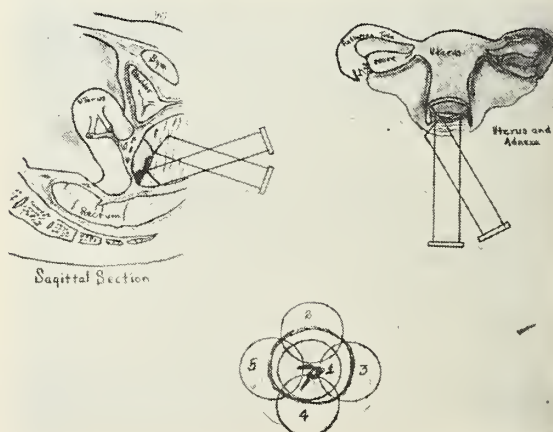


Figure 12. Diagram showing the five positions to be used in intravaginal irradiation.

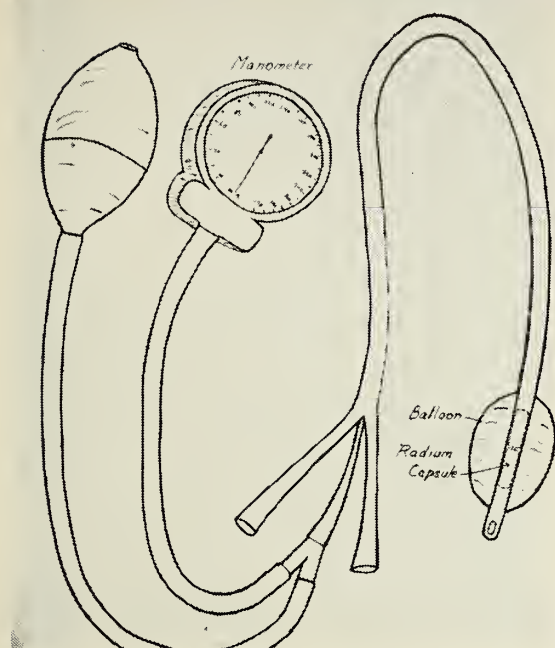


Figure 13. Retention catheter with balloon surrounding radium capsule in the catheter, and with balloon connected to manometer for use in cancer of the bladder.

complications is involvement of the floor of the bladder. With intravaginal irradiation it is possible to treat such a condition by the use of a retention catheter hooked up to a manometer (Figure 13). By using a modified bladder retention catheter, the radium may be placed inside the catheter and inserted into the urinary bladder without difficulty. The balloon surrounding the radium is then inflated to the desired extent, and this degree of inflation may be recorded and controlled by a manometer. The inflation removes the radium from contact with the tissue under treatment and at the same time gives greater depth and uniformity of dosage, which has been sought for some time in the treatment of tu-

mors of the bladder and other cavities. I have cured at least a few cases of cancer of the floor of the bladder by this method.

The complication of rectal involvement can also be treated by the intracavity cone method and can be successful in certain types of cases. There are residual tumors following operation and recurrences after surgical operation, and both can be successfully treated by using the intravaginal irradiation and cross-firing with the external irradiation.

Failure after the use of radium in the cervix and without other radiation therapy is due to the fact that at two cm. distance from the radium there is very little irradiation. One other remark, those who are around irradiation equipment of any type should occasionally test themselves as to the amount of irradiation that they are getting. This can be done by wearing a dental film.

Conclusion

I've rather hastily gone over the anatomy of the female pelvis and some of the symptoms of cancer of the cervix. I have tried to outline the method of attack at the different stages of cancer of the cervix. I wish to say that while I'm not quoting statistics, yet I do not have the fear of the first and second stages of cancer of the cervix that I used to have, and I have seen some very excellent results even in the third stage. I have seen cures of residual tumors following operation.

The procedures which I have offered for the treatment and management of cancer of the cervix are my present way of thinking after many years of successes and failures. I reserve the right to change my opinion as our knowledge of the subject warrants.

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The Radical Surgical Treatment of Cancer of the Cervix, Recurrent and Uncontrolled After Previous Irradiation and Conservative Surgery

Alexander Brunschwig, M.D.

New York, New York

The management of cancer of the uterus depends upon whether the lesion is in the cervix or primary in the corpus. The standard treatment for cancer of the cervix at present is irradiation by means of radium applied locally and roentgen rays administered in the form of pelvic cycles. Persistence of neoplasm, or its recurrence at a later date, usually is treated by additional applications of radium and roentgen rays. When these secondary courses of treatments are of necessity carried out, the prognosis is very grave indeed.

It is a fact, however, that recurrent or persistent cervical cancer may be still localized to the site of origin or at least to the pelvis. Cancer of the cervix remains in the pelvis for relatively long periods before metastasizing widely. Death in at least half of these patients is the result of uremia due to constriction of the ureters, hemorrhage due to erosion into large pelvic vessels, or infection due to septicemia arising from the large necrotic masses in the pelvis.

In recent months, at the Memorial Hospital, we have initiated a surgical program to attempt a salvage of patients with cancer of the cervix, persistent or recurrent, after radiation therapy and who also may have had conservative surgical procedures. These patients may be grouped for purposes of discussion as follows:

1. Recurrent or persistent cervical carcinoma limited to the cervix and immediately adjacent areas. Although not generally practiced, the fact that the growths are anatomically limited to the cervical region permits of a wide resection (radical panhysterectomy with pelvic lymph node dissection).

(Lantern slides were shown of several surgical specimens.)

Total number of patients submitted to operation.....	23
Surgical mortality	0
Number of patients in whom slough and induration were present without tumor (living and well six months and one year respectively)	2
Recurrences present or since died of disease.....	5
Living and well without evidence of recurrence three months to one year	11
Excision of uterus for palliation but disease left behind	5

2. Recurrent carcinoma of cervix that has involved the bladder.

Complete excision necessitates total cystectomy, total hysterectomy and vaginectomy. This has been carried out as a one-stage procedure and entails a bilateral implantation of the ureters into the colon.

(Lantern slides were shown of several surgical specimens.)

Total number of patients submitted to operation	17
Surgical mortality	6 (35%)
Died of recurrences or persistent disease	5
Living and well without evidence of recurrence up to 13 months	6

3. Recurrent carcinoma of the cervix involving the pelvic colon. This situation requires no special comment since there has been no hesitancy in the past in performing total hysterectomy and vaginectomy in conjunction with combined abdomino perineal resection for carcinoma of the rectal colon extending forward. In the case of carcinoma of the cervix extending into the rectum, the same procedure is carried out.

4. Recurrent carcinoma of the cervix involving both rectum and bladder.

A very radical one-stage procedure has been devised for excision of all pelvic viscera. This requires an end-to-end colostomy with ureters implanted into the upper sigmoid above the colostomy. The steps in the procedure are as follows:

Anesthesia: Continuous spinal or intratracheal ether has been used.

At the beginning of the operation saline and then blood are administered intravenously.

Abdominal Phase

1. The low midline incision extends a few centimeters above the umbilicus. The abdomen is palpated and inspected to confirm the absence of metastases.

2. The patient is placed in the Trendelenburg position and the bowels packed upward with laparotomy pads. The posterior parietal peritoneum over the bifurcation of the aorta is incised, these incisions being carried downward over the right external iliac artery. The right ovarian vessels and ligament are ligated and divided. The lymph nodes, and periarterial and perivenous tissue are dissected downward on the right side. The right hypogastric artery and vein near the bifurcation of the common iliac is isolated, ligated, and transected.

3. The mesosigmoid is divided over the left

common iliac vessels and the sigmoid colon pushed upward. The left ovarian suspensory ligament and vessels are ligated and divided. The lymph nodes and perivascular tissues of the left common iliac and external iliac vessels are dissected downward. The left hypogastric artery and vein near the bifurcation of the left common iliac vessel are isolated, ligated, and divided.

4. On the right side, the round ligament of the uterus is divided near the abdominal wall. The contents of the right obturator fossa and right side of the pelvis are so dissected as to mobilize these tissues en bloc mesially. The obturator vein is divided but the obturator nerve is preserved and pushed laterally to lie freely near the right pelvic wall. The arteries and veins coursing from the right pelvic wall to the tissue that has been retracted mesially are ligated and divided.

5. The peritoneal reflection from the anterior abdominal wall onto the bladder is divided, and the latter separated from the symphysis pubis. The bladder is completely mobilized except for its attachments at the base.

6. The areolar tissues on the left side of the pelvis and in the left obturator fossa are completely dissected and mobilized mesially as described under "4" for the right side.

7. Both ureters are divided at a convenient level, well above any gross evidence of involvement by neoplasm. In mobilizing the ureters, care is exercised not to remove too much periureteral tissue. This tends to prevent necrosis of the ureters.

8. First one and then the other of the ureters is implanted into the sigmoid colon. The sites of implantation vary depending upon the redundancy of the sigmoid and the length of the ureters remaining. Needless to add, the implantations are made in such a manner as to avoid sharp angulations. In three instances in the series herein reported, the right ureter was implanted into the cecum. The ureteral implantations are carried out essentially according to the Coffey-I method.

9. The upper pelvic colon is transected and each cut end invaginated by a purse-string suture. The mesopelvic colon is divided with preservation of the blood supply to the sigmoid.

10. The pelvic colon is dissected away from the concavity of sacrum and mobilized completely down to the pelvic floor.

11. At this stage, all the pelvic viscera are isolated and mobilized except for the attachments to the pelvic floor. The abdominal wound is closed, with the end of the sigmoid brought out through the midline incision. When the wound is closed the colostomy is opened. A hard rubber tube drain ex-

tending into the pelvis is inserted in the lower angle of the wound.

Perineal Phase

12. The patient is placed in the lithotomy position. The vaginal introitus is closed by continuous suture and the anus by a purse-string suture.

13. Elliptical incisions are made to encompass introitus and anus and extend from the tip of the coccyx to below the clitoris which is preserved. The dissection is carried upward and the levator ani muscles are divided.

14. The pelvic contents, en masse, are taken out of the pelvis from below.

15. The perineal wound is closed. The deeper soft tissues are approximated and the skin is closed with interrupted chromic catgut sutures. Usually there is blood exuding from the large raw surfaces of the pelvic walls, so gauze packs are placed against the hollow of the sacrum. These are brought out through the posterior angle of the wound. A rubber tube drain is brought out through the anterior angle of the wound just below the clitoris.

Up to the present, 44 patients have been subjected to this procedure.

(Lantern slides were shown of several surgical specimens and patients.)

Number of patients operated upon	44
Surgical deaths	11 (25%)
Since died of disease	12 (27%)
Living with metastases	3 (7%)
Recently operated	2
Living and well without evidence of metastases..	16 (36%)
Living and well for one year	4

If the entire series of patients is considered as unequivocally lost because of the presence of recurrent or persistent disease after failure of standard therapeutic measures the following summary may be presented.

Total number of cases	84
Surgical deaths	17 (20%)
Second recurrence present or dead of disease after secondary operation	25 (30%)
Living, well without evidence of active disease....	33 (39%)
(Few months to over one year)	

The interesting fact is that 33 or 39 per cent of the series at this writing have been rendered free from evidences of active neoplastic disease for periods varying from several months to over a year.

Of course, it is to be anticipated that the large majority or all these survivors will eventually succumb but an appreciable palliation has been afforded and if experiences with other forms of advanced abdominal cancer can mean anything, some of these patients might be permitted to survive for prolonged periods. Only further and more prolonged experience with this type of surgery can provide more definite information along these lines.

Malignant Melanoma of the Skin

Lauren V. Ackerman, M.D.

St. Louis, Missouri

Any pathologist who looks at any number of so-called nevi and malignant melanomas will develop a certain amount of humility, for the chances of error are always present. In discussing the malignant melanomas of the skin, I do not wish to include malignant melanomas occurring in other locations. In our experience perhaps one out of every 40 cases of skin cancer turns out to be a malignant melanoma of the skin. You cannot speak of malignant melanomas of the skin without speaking of nevi. The word nevus by definition means mark, and probably it would be more proper to call them moles. Everyone has moles, but only a small percentage undergoes malignant change. It is very infrequent for the verrucoid type of mole to become malignant, and the hairy mole only rarely becomes malignant. Usually it is stated that the black mole most frequently undergoes such transformation. I think it is probable in quite a number of instances that a black mole is already a malignant melanoma when it is first seen. It was my impression, after going over 75 cases of malignant melanoma, that one of the most frequent types of moles which is going to undergo transformation is the flat, soft, mole which is hairless and only very slightly elevated (Ackerman, Bloch).

In a survey of this group of 75 cases I tried my best to find out whether any pre-existing mole was present.

Location of Lesions

Location of Lesions	Number	Per Cent	Previous Mole
Lower extremities	26	35	21
Head and neck	24	32	10
Chest	16	21	10
Upper extremities	7	9	4
Trunk	2	3	1

This series demonstrated that malignant melanoma is most common in the head and neck area and the lower extremities, with a fair number on the chest. In about 65 per cent of instances through the history and examination of the specimen a mole was present that in time became a melanocarcinoma, although you must remember that only a small fraction of all moles ever does undergo such transition (Webster). In a high percentage of instances the mole had been present since childhood.

Can you by the microscopic examination tell what kind of mole is more apt to become a malignant

melanoma? The mole is a congenital malformation and, unlike other processes, although benign, it has no boundaries. It can show different microscopic patterns. These neval cells can be mainly within the dermis, rarely entirely within the epidermis, or they can be what has been termed junction nevi in which neval cells will be both in the dermis and seemingly within the epidermis. There is some evidence that the melanocarcinomas arise more frequently in junction type moles (Becker, Allen). In this group, and in all moles (with rare exceptions) that I was able to find in a survey of several of the large hospitals in St. Louis, all those below the knee were junction type. It is certainly true that only infrequently will an intradermal nevus become a malignant melanoma.

There are certain microscopic changes which enable the pathologist to tell when a mole has become malignant. The earliest changes first occur in groups of cells. These malignant cells show enlargement not only in the cytoplasm but in the nucleus. In the nucleus there may be very prominent nucleoli, and mitotic figures can appear. You may even see nests of tumor cells deep within the lymphatics.



Figure 1—Photograph of an early melanocarcinoma in an adult. Note large cells with prominent cytoplasm, prominent nuclei and nucleoli. There are also several mitotic figures present.

What are the clinical changes in a mole which should excite suspicion? The danger signs are *increase in size, deepening of pigmentation and ulceration*. There are certain indications for mole removal. Any mole located in an area subjected to chronic irritation, around the collar, the belt, or the region of the shoe, should be removed. Any mole which is undergoing increase in size, deepening of

pigmentation should probably be removed. It is also probably justified to remove moles below the knee which are flat, soft, brown and hairless.

The clinical pattern of malignant melanoma can vary remarkably. In most instances, especially when it is deeply pigmented, you can diagnose the case simply by looking at the patient. If you have a tumor (not a wart) on the plantar surface of the foot, you must consider it to be a malignant melanoma until proven otherwise. In fact, the most common malignant tumor of the lower extremities is the malignant melanoma. I have probably seen more

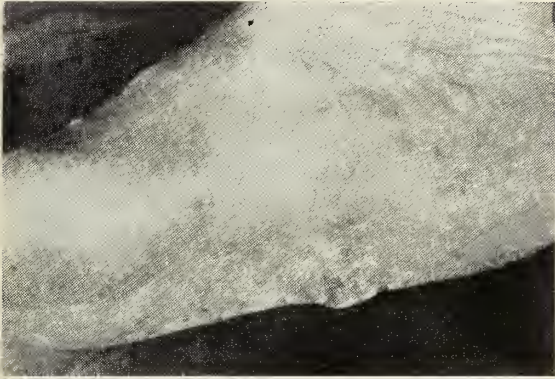


Figure 2—Ulcerating relatively nonpigmented melanoma of the plantar surface of the foot.

of these tumors treated incorrectly on or around the plantar surface of the foot than in any other area. They are often incised as abscesses, curetted, or inadequately removed.

If a pigmented tumor appears in the subungual area it is often thought of as an infection, but it is usually a malignant melanoma. Other tumors, such as the glomus tumor, have an entirely different clinical pattern with usually exquisite pain. Rarely a malignant melanoma can grow superficially and this

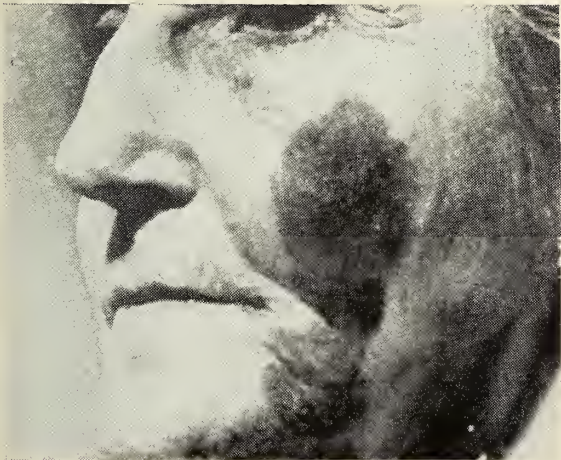


Figure 3—Freckle type of malignant melanoma growing superficially and of 10 years duration.

is designated as the freckle type of malignant melanoma. They grow slowly and may remain localized for many years. They are very reluctant to metastasize to regional nodes. At this point I might say something about biopsying a malignant melanoma. We have not been able to obtain evidence that an incisional biopsy of a questionable pigmented tumor, even if it proves to be a malignant melanoma, has ever caused any harm. In some instances biopsy may be necessary, particularly when the tumor is growing in an area where a radical excision would imply deformity or considerable plastic repair. If such a neoplasm is in an area where excision will not imply such unfavorable factors, then the surgeon can at once proceed to radically excise the lesion.

How do you recognize melanocarcinoma when you see it under the microscope? One of its most characteristic qualities is its production of melanin pigment. Now melanin pigment is usually confused with hemosiderin. Let us say that we have a tumor which is suspected of being melanocarcinoma and that there is pigment in it and we wish to prove that pigment is melanin pigment. In the first place, practically all malignant melanomas have pigment to some extent within the tumor. This pigment may be very small in amount, and you may need a great

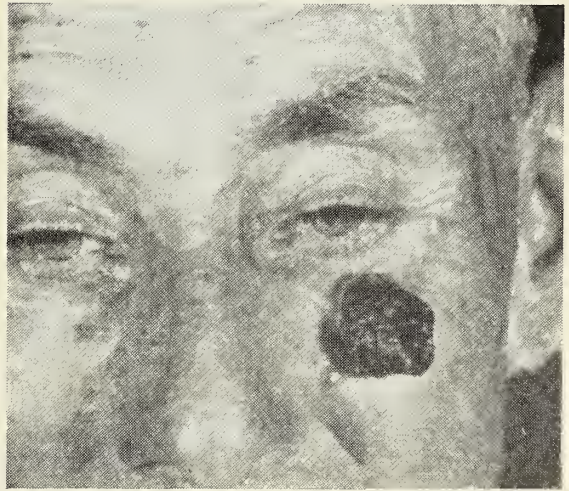


Figure 4—Clinical example of fungating deeply pigmented malignant melanoma.

many sections. At times silver stains (Fontana) may bring out hidden melanin. Sometimes superficial biopsies will show no pigment and the deeper areas will show large amounts of pigment. An iron stain stains the hemosiderin a brilliant blue and the melanin pigment retains its brown dull appearance. Hemosiderin is golden yellow, coarse and refractile, while the melanin pigment is fine, brown, and non-refractile.

Unfortunately, the presence of melanin pigment within a tumor does not necessarily mean that that

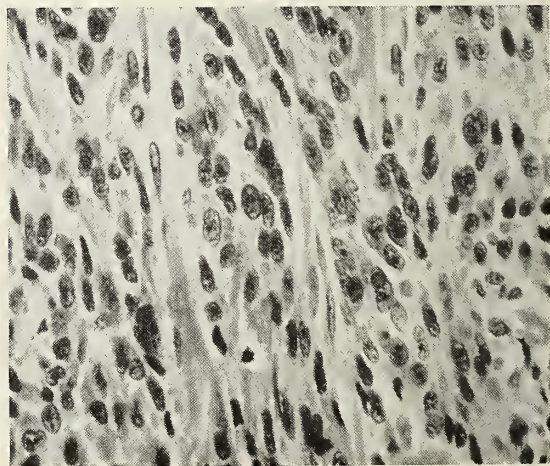
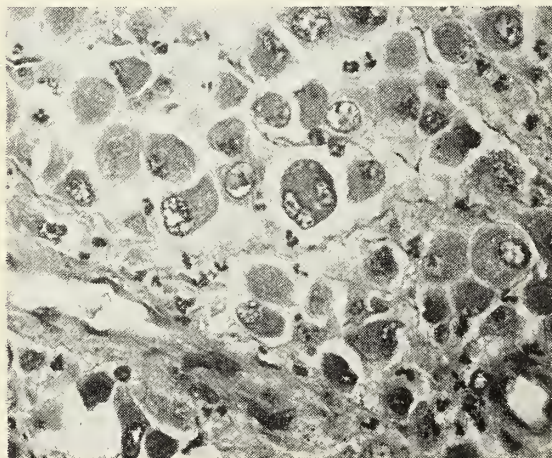
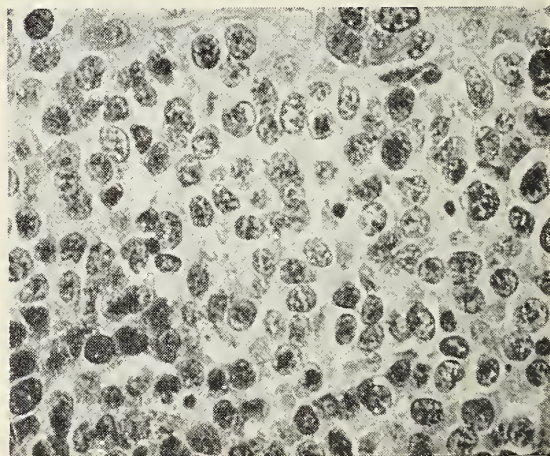
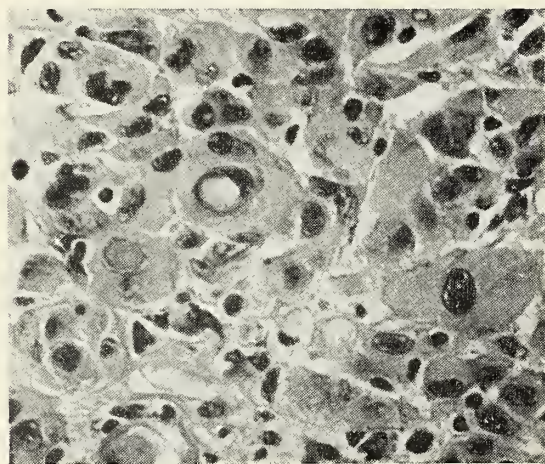
person has a melanocarcinoma. A basal cell carcinoma may be pigmented by melanin pigment and confused clinically with a malignant melanoma. This can be distinguished microscopically, for it has the characteristic pattern of a basal cell carcinoma. Epidermoid carcinomas rarely may also contain melanin pigment (Khanolkar, Stewart). Pigmented benign lesions of the skin may contain melanin pigment and thus also be confusing.

At times a reticulin stain may be helpful for it may reveal rather characteristic patterns, but this pattern is certainly not absolute. Also, you may find small nests of cells in malignant melanomas which are very similar to the nests of cells which one sees in a perfectly benign mole.

In the relatively non-pigmented melanoma the microscopic pattern may vary in an individual tumor. It may also vary in the primary and the metastases. It may superficially resemble an epidermoid carcinoma, a fibrosarcoma, a lymphosarcoma or a ganglioneuroma.

This rapidly growing tumor with its tendency to spread rapidly by both the blood stream and the lymphatics can go to practically any organ and grow there. Its growth pattern within lymph nodes has some practical significance, for when this tumor metastasizes to a lymph node, it replaces the node with very little reaction. We have found that when the regional nodes draining a malignant melanoma are enlarged, this enlargement indicates that the patient has metastases to these nodes unless there is prominent infection in the primary. Occult clinical metastases may be impossible to palpate and this will be particularly true in the axillary area.

How should you treat these malignant melanomas? There is no evidence that hormone therapy or castration has been of value. In practically all instances this tumor is exceedingly refractory to irradiation, which may be related to its neuroectodermal origin. Probably many instances of malignant melanomas reported in the literature as cured by irradiation were either not confirmed microscopically or were mis-



Figures 5-8—Bewildering variation of microscopic pattern in four Proven cases of malignant melanoma of the skin.

diagnosed by the pathologist. Perhaps they were pigmented tumors but were not in the malignant melanoma group.

We feel that the treatment of a malignant melanoma is radical surgical excision combined with radical dissection of the lymph node draining area when such areas are predictable. If a tumor is on the leg, you are going to dissect the inguinal node area, or if it is on the head or neck you are going to dissect the neck nodes. However, if the tumor is growing in the mid-abdomen, then the lymph node drainage area is not predictable.

The prognosis is difficult to evaluate in a single case. You can make certain general statements about prognosis. In the pre-pubertal child a malignant melanoma has a very strong probability that it will behave in a fairly benign fashion for there are only rare instances of metastases in this group (Spitz).

The sex, presence or absence of melanin and the microscopic pattern have no effect on prognosis. The amount of reticulin in the tumor, the amount of the pigment in the tumor or the metastases do not seem to bear any relation to the prognosis. The freckle type of tumor (a superficial lesion) has a much better prognosis because of its reluctance to metastasize. The subungual type, of course, also grows rather slowly and is best treated by amputation of the finger and axillary node dissection. The location in the head and neck area has a favorable outlook. Probably there are two explanations: in the first place, these patients will go to a physician more quickly than if they had something growing on their lower extremities. In our series the time interval in the head and neck area before the patient visited a physician was just half that of the foot. Secondly, lymph node dissections of the cervical lymph nodes are much better surgical procedures and much more complete than dissection of the inguinal area. No previous treatment is of very great importance. However, I didn't have any evidence that previous bad treatment speeds up the process; the average length of life in those who died either with or without treatment was about the same. Now, certainly those patients who have primary radical surgical excision with regional node dissection are going to have a much better outlook than the group with poorly conceived excisions and no regional node dissections.

Perhaps I should also say something about the dissection in continuity (Pack). The malignant

melanoma is a very rapidly growing neoplasm and it metastasizes readily. If the tumor is located fairly close to the lymph node bearing group to which it drains then it will be logical and quite simple to do a dissection in continuity. For instance, if a tumor is located on the leg very close to the groin, dissection in continuity would be logical. In a similar fashion, if it is located on the face, then dissection in continuity could be done. But if the tumor is located on the big toe and you have questionable node involvement of the inguinal region, I am not in favor of dissection in continuity. Neither am I in favor of hemipelvectomy or interscapulo-thoracic amputation. If the tumor is located on the lower extremities, the trunk or the abdomen, the prognosis is probably much poorer because of the unpredictability of the lymph node drainage. If the nodes are involved but not fixed, then it is quite unfavorable, but there should be no hesitation in operating a patient with involved nodes. Certainly the greater number of the nodes involved the worse the prognosis, and if the patient has satellite skin nodules the prognosis is usually hopeless.

If the patient has persistent melanuria we have found that the prognosis is hopeless. If the nodes are fixed or if distant metastases are present the prognosis is hopeless.

In primarily treated cases of malignant melanoma in which regional node dissection is done and when those areas are predictable, it is possible to get a very satisfactory five-year survival. I believe that when this tumor is found it should be treated without delay by radical excision and radical node dissection when such areas are predictable.

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Benign Lesions Of The Breast

Nathan A. Womack, M.D.

Iowa City, Iowa

Cancer of the breast remains one of the most common of all cancers. In spite of our efforts to be optimistic about the disease, the end results in many instances are such that it is easy to lead to a feeling of intense pessimism. This has been true particularly in the psychic makeup of most women with lesions of the breast. There is hardly a woman who has not had a neighbor or a friend who has died from cancer of the breast. These deaths often have been most miserable. At the same time there is hardly a woman who has not had a friend operated upon for cancer of the breast with survival. This latter woman, however, never tells about her cure. It is kept a deep secret. As a rule, when the average individual discovers a lesion in her breast, she does one of two things. She becomes terrified and afraid to find out the true nature of the lesion, and does not seek medical advice until late; or she becomes frightened at the slightest disability and confronts her physician often with insignificant disturbances.

This latter situation produces a very interesting psychologic situation. The apprehension on the part of the patient is a very contagious thing. Her husband immediately has the same feeling, and this attitude can be very easily conveyed to the examining physician. This physician may react in one of several ways. He may tell the patient that the lesion is of no significance and to pay but little attention to it. Again, in his apprehension, he may be unusually radical in taking care of a lesion that is completely benign. Obviously, the logical course should be for the physician to understand the exact nature of the lesion, for then the proper care becomes much easier to carry out.

It has been my experience when we are confronted with a patient who has a lesion in her breast, there are two fundamental questions in her mind which, as a rule, she never asks. She first wants to know if the lesion is malignant. If she can be promised that it is benign, the next question is, "What is its natural history? Will it ever develop into cancer." We, therefore, must be in a position to answer both of these questions definitely in giving our patient advice. Fortunately, we always can find the answer of the former question. The lesion can always be removed and examined microscopically and the diagnosis of cancer confirmed or the disease proved not to exist. It is in the so-called benign lesion that many physicians get into difficulty. Often he cannot distinguish between the two on physical examination. However, the more adept the clinician

becomes the less he has to rely on biopsy. At the same time there is no excuse ever for a physician to allow a mass to exist in the breast, the nature of which he does not know, until the passage of time determines the true nature of the disease. This is one of the most dangerous of the differential methods of which we know in determining whether a lesion of the breast is benign or malignant. We, therefore, must begin with the attitude that when a patient confronts us with a lesion in the breast we must decide then and there whether or not the lesion is malignant. If the lesion is not malignant, biopsy often gives us considerable information as to the subsequent course of events. Therefore, the benign lesion becomes most important to us; and it is this phase of the breast problem which I should like to discuss this afternoon.

My thesis will be a simple one. It is dependent upon the fact that the development and the basic structure of the breast are dependent upon the action of certain hormones acting upon breast tissue and that structural malformations in the breast of a benign sort are a result of a disparagement in the relative reaction of these hormones in the breast as related to normal secretion and normal structure. Thus, the entire story of benign lesions of the breast will represent not a group of different diseases but a continuum, dependent upon the reaction over a long period of time of certain structures to certain stimuli. One might consider then the pathology of the breast as a type of pathology in the fourth dimension because it is affected by time. The lesion which a girl will show in the late teens or the early twenties may change completely in the thirties and even more in the later thirties. The breast then is not a static viscus. It is extremely dynamic in its structure, and your patient will have a different picture at different periods of her life.

In order to substantiate this thesis, I want to consider certain abnormalities in the breast as related to sex hormonal secretions. In the beginning before puberty the male and female breasts are identical. They exist as a small group of major ducts directly beneath the nipple. As puberty begins, at first the breast is affected by the secretion of estrogen. The effect of this hormone on breast structure is variable. By and large, it produces an increase in the length of the duct, an increase in the diameter of the duct, and epithelial growth. It also has to do with water retention and tends to produce normally a faint edema of surrounding fibrous tissue of the duct.

There is another secretion from the ovary which comes along a little bit later in life when ovulation begins. That is the secretion from the corpus luteum. This, as is well known, is called progesterone. The action of progesterone is to form alveoli. It changes the terminal duct from one with an ending that looks like a test tube to an ending that looks like a bunch of grapes. In some animals, the macaque monkey, for instance, estrogen will to a certain extent form acini. It is probable in some humans that estrogens also form some of the alveoli. By and large, however, alveolar formation is a function of progesterone. Progesterone tends to act as a physiologic antagonist to the estrogen. While it is producing the alveoli or the acini, it also tends to decrease the extent of duct formation as well as periductal edema. Therefore, in a way two stimuli from the ovary also may be physiological antagonists.

I think we would make a mistake were we to think that all breast tissue is affected equally and simultaneously by either of these two secretory agents. It will be realized that the breast requires several years for its formation during the period of puberty. Another example of the time effect on breast structure is seen in the growth of the breast during pregnancy. Although the corpus luteum of pregnancy is constantly secreting, it is not until about four and one-half or five months that complete acinar development exists. Many of the acini are formed within the first two or three weeks but others not for a very long time. During active sexual life, therefore, many of the cellular structures of the breast do not respond to hormone action identically. Again, all women do not ovulate at the same chronological time month after month. This is a familiar observation. Furthermore, women will continue to have estrogen secretion long after ovulation has ceased. Menstruation is a common phenomenon in the later forties but pregnancy is not. That the lack of ovulation and, thus, corpus luteum formation might play a part in forming an imbalance in ovarian hormonal secretion, is suggested by a review of some of our patients a few years ago at the Barnes Hospital in Saint Louis. We felt that if there were a relative estrogen hypersecretion it might be explained by the infrequency of ovulation. We, therefore, studied the frequency of pregnancy in women with benign lesions of the breast as compared to the statistical occurrence in women of this region. It is interesting to note that pregnancy was approximately one-half as common in women who have benign lesions of the breast as in normal individuals of that age period. In all probability, there will be a dislocation at times in the relationship between the secretion of estrogen and the secretion of progesterone by the ovary. Again, there is a compli-

cating situation in the effect of the adrenal cortex. We know very little about its action on breast structure in normal situations. We do know that it can affect these breast structures.

Usually the first pathologic situation encountered in the breast is seen in boys at about the age of 14 to 18 years; that is, during puberty. It is due to the fact that the testis also is a great source of estrogen secretion, perhaps as great as the ovary. Normally this estrogen secretion on the part of the testis is counterbalanced by androsterone secretion on the part of the interstitial cells. There are times, however, in the adjustments of increased secretions during puberty in which the amount of estrogen produced by the testis outweighs the amount of testosterone which ordinarily would counteract it physiologically. This results in a small button-like enlargement under one or both nipples. This enlargement usually is very tender and very embarrassing. If that tissue is removed, one can see that there is epithelial hyperplasia, periductal edema, and budding on the ducts. It resembles the picture that one sees experimentally in the human male with the injection of large amounts of estrogen. This lesion never does harm. It is not a precancerous lesion. It really is not gynecomastia. It is a hormonal mastitis in the sense that there are inflammatory cells and it is tender. The physician can promise his patient, if the lesion is left alone everything will soon be all right. One can hasten this process by giving male sex hormone in the form of methyltestosterone. Certainly there is no excuse for excising the nipple in the treatment of the disease unless it is done purely for tenderness.

One can have gynecomastia, however, that is of a much more massive type. Such a type may be due to, or may be associated with, primary tumors of the testis. It also may be associated with a primary tumor of the adrenal cortex. Interestingly enough, however, tumors of the adrenal cortex in young boys produce feminization and in girls masculinization. At the same time one must be careful to explore the possibility of such adrenal or testicular lesions before considering true gynecomastia a simple hormonal imbalance which, in all probability, will readjust itself.

The microscopic picture in massive gynecomastia is characteristic. There is an enormous amount of edema, clear-staining cells, and a considerable amount of budding. The inflammatory process has disappeared. It is a much more difficult problem to produce involution in this type of gynecomastia than in the other preceding type of mastitis. In most instances in my experience, however, it has been benefited markedly by the use of the male sex hormone.

In the female one of the earliest changes, besides

the beginning development of the form of the breast which comes as a result of the duct system and lobule system, is the appearance of pigmentation around the areola and what seems to be small elevated nodules around this pigmented area. These modified sebaceous glands, or the glands of Montgomery, are formed by the action of sex hormones. They will get larger during menstrual time and larger during pregnancy. Their function obviously is one of lubrication to prevent cracking of the areola and cracking of the nipple. They are of no significance clinically except occasionally as a result of trauma this lipid material will be extruded into the surrounding tissue and a foreign body granulomatous process set up. It mimics tuberculosis microscopically and it mimics syphilis microscopically. Excision is the treatment of choice, and one has only to excise the skin of the areola which is involved and not carry the excision down into the duct system.

We recently have been able to study the breast of a patient with a tumor of the adrenal cortex that produced masculinization at about the age of 30. Up until then she apparently had been normal. She developed a beard, her voice became coarse, her breasts became flabby, and on microscopic section there was no periductal edema. In fact, one saw but few ducts and these were small. The outstanding appearance was the residue of the acinar system. The ductal system had become atrophic. While this apparently was not progesterone that was secreted by the adrenal cortex, it was one of the 17 ketosteroids that chemically was closely related to progesterone. The observation tends to substantiate the apparent antagonism between the progesteronal group of hormones and the estrogen group.

I think it is important that we remember this picture, because then it gives us an opportunity to understand what will happen to the female breast when we give large doses of the male hormone.

In the female one of the earliest manifestations of morphologic alteration that is the result of an abnormal response to chemical stimulus is the so-called fibroadenoma. This is a small area of breast tissue, which for some strange reason has reacted differently to the estrogens than has the rest of the breast. The ducts are dividing profusely. There is a tremendous amount of edema. Where such edema is extensive, the term adenomyxoma often is used. Such edema is due to retention of fluid very much as one sees in the endometrium, probably as the result of a female sex hormone. This naturally creates a need for more space, and as it does it presses into the normal breast tissue and forms an adventitious capsule. It is within the breast tissue so that it can be moved around as one would a small hickory nut.

The adenofibroma, then, probably is not a true tumor.

When an adenofibroma occurs in the early twenties, one sees less edema. More commonly there are multiple encapsulations with beginning dilatation of the ducts. Intracanalicular development is common. In the later twenties, thick collagen begins to appear in the stroma. The ducts become tremendous and fibroblastic proliferation, which probably is secondary to the edema, enfolds into the ducts, giving the striking appearance of intracanalicular fibroadenoma.

The gross appearance of the lesion is obvious from its microscopic structure. The expanding focal growth has formed a capsule under a great deal of tension. It has been a slow expanding lesion and, therefore, when the capsule is sectioned the tumor overflows. Because of the large ducts, if one spreads any part of the tumor it splits. It is a lesion so completely characteristic that there hardly is the need for microscopic confirmation in making the diagnosis.

We, then, can tell our patient from our knowledge of this lesion, its gross characteristics, and its microscopic appearance that she does not have a cancer. Our next question relates to what happens to these lesions if they are treated. We recently had an opportunity to study such a lesion in a woman of 79 years. She stated that the tumor had been present for 55 years. It was encapsulated and freely movable, although unusually hard. The duct system was atrophic, being similar to the normal breast tissue in the remainder of her breast. The fibrous stroma contained a collagen much denser than the normal breast, and there was no fat. Atrophy of the epithelium following menopause is the usual finding. Occasionally something else happens. During pregnancy a fibroadenoma may grow considerably in size, because it seems to be much more sensitive to the hormonal stimulation than the rest of the breast. Similarly, following lactation involution is much slower. Rarely there is epithelial stimulation. I think I have seen on at least one occasion a cancer arising from such a situation. I do not think that it is a very common outcome, however. Most of the cancers which one sees and which look as though they came from a pre-existing fibroadenoma are cancers which arose in the breast in which there is a diffuse fibroadenomatosis. It must be remembered that usually in the fourth decade or later fibroblastic proliferation is much more diffuse along the ducts and does not form the isolated nodule quite as frequently as it does in the younger person.

More common than carcinomatous change in the epithelium is sarcomatous change of the stroma. One often will see such a sarcoma developing around fairly normal looking fibroadenomatous ducts. As

such, it is called adenosarcoma. While it gives a better prognosis than fibrosarcoma in general, it should be considered a definitely malignant tumor. At one time I felt that a simple excision of the lesion in the breast was adequate treatment; but more recently I have encountered three patients with axillary node metastasis. I now feel that in the so-called adenosarcoma, or cystosarcoma phyllodes, it must be treated with radical excision. The diagnosis never is very difficult. These lesions sometimes are as large as an orange. They never are small. As a rule, there is a history of a long-standing fibroadenoma which has suddenly increased in size.

It is safe to say that the fibroadenoma should be removed because it is potentially dangerous and is simple to remove.

Often during the latter part of the third decade and early part of the fourth, many women begin to show an eccentric reaction in several areas of the breast. Ducts dilate and on cut section they resemble small cysts. At times the epithelium of this duct or cyst resembles that of a sudoriferous sweat gland. This seems to be a lesion typical of the human, although it has been produced experimentally by long-continued estrogenic stimulation in monkeys. No other animals seem to give that type of metaplasia. Along with the minute cyst formation, there occurs periductal fibrosis.

With the progression of time, the ducts become larger with much more periductal fibrosis and lobule formation disappears. All evidence of progesterone action leaves. With each menstrual cycle, these findings become exaggerated. With the periductal fibrosis, there often is tension with the attempted enlargement of the ducts and the patient often complains of pain and tenderness. This is exaggerated particularly shortly before the menstrual period. Obviously, the only way to prevent the pain is to prevent the increase in the size of the ducts, although great help often is afforded by support of the breasts with the proper type of brassiere. Methyltestosterone again sometimes is of great help in the treatment of that symptom. Examination of the patient's breast at such a period demonstrates what appears to be a fine nodular extension along the major ducts, often in a single small area but at times throughout both breasts. These nodules are not large, at times being only one millimeter or so across. However, at times three or four of them will coalesce and give the impression of a small hard irregular tumor. Often these areas must be excised in order to exclude cancer.

In the latter part of the fourth decade and the early part of the fifth, ovulation often ceases completely or else is extremely rare. Thus, there appears a marked preponderance of estrogen secretion. It is

at this period that we encounter the so-called blue dome cysts. These may become very large. The cyst generally contains clear fluid and, microscopically, the epithelium, as a rule, is flattened. Many of them may be lined by epithelium of the sweat-gland type; and throughout the area of breast tissue adjacent the cyst, one encounters ducts of varying sizes. Rarely does one see evidence of lobule formation. Where involution has been rapid, areas of lymphocytic infiltration may be encountered.

Up to this point in our consideration we have paid relatively little attention to the numerous diagnostic terms used in the description of this disease. Such terms may be confusing. It is the understanding of the process that is important. So far, also, we have dealt with no evidence of epithelial overgrowth of any considerable extent. We have been concerned chiefly with abnormal duct formation and abnormal fibrous tissue reaction. What chance does a patient with such a disturbance have to develop a cancer when such lesions are present? Statistically, we perhaps would not be too far off if we said that ordinarily one woman out of every 200 will develop cancer of the breast. In the lesions which have been considered above, it is probable that about one woman out of 100 will develop cancer of the breast. Her chances of getting a cancer, regardless of whether or not the lesion is removed, therefore, are doubled. Yet, at the same time a one per cent chance of developing cancer in a particular viscus is a fairly slight chance and hardly warrants one being very radical in the treatment of such a lesion. If, therefore, we can exclude cancer, it seems rational to let these lesions alone because to treat them at all, in such a way as to prevent cancer, would require bilateral mastectomy. This does not to me appear to be justifiable.

Sometimes during the latter part of the fourth decade and the early part of the fifth, we encounter a complicated situation in the microscopic study of our benign lesions. This is one of epithelial overgrowth. This may present itself as a simple hyperplasia of the lining of the ducts, or the cells may grow in papillary form or even completely occlude the ducts. Such a lesion has been called carcinoma in situ. Again, it has been spoken of as a premalignant lesion. It, however, must be remembered that such a term does not necessarily mean that the lesion is destined to become malignant as is so often the case in similar hyperplasias of the epithelium of the stomach or of the rectum. Such hyperplasia may exist for many years with no evidence of invasion. If that epithelial overgrowth were to occur in a large duct just beneath the nipple, it would be considered as an intraductal papilloma. Where such overgrowth occurs in a large cyst, it is called an intracystic

papilloma. Where it occurs in the small or terminal ducts, it has been given the name adenosis, or Schimmelbusch's disease. All of these represent the same underlying lesion; namely, one of epithelial hyperplasia. As long as the growth does not invade into the breast stroma, it is considered benign. The moment that invasion occurs, it is considered malignant.

Let us now consider the probability of this group of lesions in which there is epithelial overgrowth of becoming malignant. This is a question which is hard to answer because many of the lesions are removed in their entirety for microscopic examination. Often enough, however, the lesions are multiple and many are left behind. I do not think one is too inaccurate to say that somewhere between five and 10 per cent of these patients from whom we have removed a lesion and studied it microscopically subsequently will develop cancer of the breast. This gives us a situation in which one person out of 10, or one person out of 20, definitely will develop a cancer. Therefore, here I think one must be more aggressive in his therapy. For this reason I feel that in this situation because we can never be sure that all of the hyperplasia is removed by the simple biopsy, the entire offending breast must be removed. In this judgment, many people would disagree.

The diagnosis of such epithelial proliferation before biopsy is not difficult to make if there is a discharge from the nipple. Where such a discharge from the nipple is bloody, one can rest assured that he is dealing either with epithelial overgrowth of the sort which we have described or else frank cancer. In a recent analysis of the patients seen at University Hospitals at the state University of Iowa, Donnelly noted that seven per cent of such patients with a bloody discharge had small duct proliferation, 31 per cent had duct papillomas, and 32 per cent had ductal carcinoma. Considered in another way, in those patients presenting themselves with bleeding from the nipple, half of them already had developed carcinoma and the other half presented a type of epithelial hyperplasia that often results in carcinoma.

Almost the same association was noted where a serous discharge was encountered. By serous discharge it must be understood that I am considering that type of fluid that is albuminous, clear, and resembles very much blister fluid. Where such a clear discharge or a bloody discharge exists in a patient beyond the fifth decade, it would seem to me that the burden of responsibility rests upon the physi-

cian who can exclude malignant or premalignant disease. I shall illustrate this with a particular example. Recently I was consulted by a patient 61 years old because of a serous discharge from her right nipple. She did not have a palpable mass that I could elicit. Because a woman at the age of 60 should not begin a serous discharge from her nipple without serious underlying difficulties, I elected to do a radical excision of her breast. When the entire breast was removed and sectioned, a small cancer approximately four millimeters in diameter was found invading the fascia of the pectoralis major muscle. It was so deep in the breast tissue that it could not be palpated externally. There also were several small metastases in the regional lymph nodes of the axilla. The entire duct system was involved in a diffuse hyperplasia. Here, then, was an instance in which the only revealing clue to the presence of a cancer was a clear, blister-like fluid coming from the nipple of a patient well beyond menopause.

I feel that our experience in a large series of patients who have had a clear serous discharge or sanguineous discharge from the nipple is enough to justify the radical approach in the handling of this kind of benign lesion.

If the nipple discharge is a lipid yellow or if it is green, milky, or brown, we as a rule are dealing with an entirely different lesion. Here we are not confronted with epithelial proliferation as much as we are dealing with a stagnation of duct secretions. As a rule, this is associated with cystic lesions discussed in the early portion of this paper. Here, then, the radical approach of excision of the breast is not justifiable.

In conclusion, may I say that it seems to me an impossibility for the surgeon to approach the problem of lesions of the breast adequately if he does not have a clear understanding of the underlying pathologic lesion. To remove the breast lesion, to send it to a pathologist, and to rely entirely upon a simple diagnostic term is inadequate. The surgeon also must look at his lesion grossly and microscopically. It is only in the understanding of the basic situation extant that the surgeon can give the proper care and the proper advice to the patient with a lesion in the breast. This makes it possible for him to individualize each situation. It makes it possible for him to be conservative when conservative measures are justified and radical when radical measures are indicated.

Current Progress In Clinical Cancer Chemotherapy

Morris Belkin, Ph. D.

Bethesda, Maryland

There is at the present time not only theoretical interest in the possibility of developing chemical agents which might be effective in treating human cancer, but also considerable activity in a number of clinics throughout the country where such agents are being tested and their value estimated against a variety of neoplasms. There is a different attitude held now concerning chemotherapy than was the case even a few years ago.

In medicine, as in many other things, we have inherited much of the tradition and learning of the European schools. One of these concepts was that of "therapeutic nihilism," largely due, I believe, to Skoda of Vienna at the turn of this century. Many of you may have heard the saying which I am told was expressed in those days, i.e., "that if Rokitan-sky's autopsy findings confirmed Skoda's diagnosis, the patient had no right to complain." Today, however, *therapy* has taken its rightful place in importance alongside diagnosis, and the interest and effort expended in *cancer chemotherapy* is ever on the increase.

Since there are a number of substances which in recent years have been given clinical trial, at least to some extent, I have selected for brief presentation those which have been studied most thoroughly to date; but I will also mention some about which there is professional and public interest, although their standing as chemotherapeutic agents is at present still undecided or about which available evidence is at present not encouraging.

Hormones

(a) Estrogens

In 1943, Huggins,¹ shortly followed by Herbst,² reported that estrogens could be successfully employed in controlling a certain proportion of cases of prostatic carcinoma. The administration of diethylstilbestrol or ethinyl estradiol is followed in responsive cases by (1) decrease of metastases, (2) reduction in size of the prostate, (3) a fall in the serum acid phosphatase level, (4) relief of pain, urinary obstruction, and increase in the sense of well-being.³

It has been shown by Kahle⁴ and his collaborators that the prostatic cancer cell undergoes definite degenerative changes following estrogen therapy, i.e., nuclear pyknosis, cytoplasmic vacuolization with subsequent fragmentation and disappearance of nuclear material, and finally, replacement by fibrous stroma, smooth muscle and round cells. A complete absence of cancer cells in the prostate after

two years of massive doses of estrogen has been reported.

Bilateral castration produces about the same effects as estrogen therapy and appears to act more quickly than hormone therapy, when pain is used as a criterion. The comparative advantages of the two are still a matter of some debate, although there is a growing conviction that estrogen therapy in most cases accomplishes all that castration does, and in addition spares the patient the physical and psychic trauma of orchiectomy.

It has also been recommended that the doses of estrogen should be generous and continued throughout the life of the patient.

Estrogen therapy has also been tried for treatment of carcinoma of the breast in females. The best evidence to date for the results of such treatment is as yet inconclusive.⁵ Definite regressions in the primary tumor, and lymph node and pulmonary metastases have been obtained; but these results are transient with considerable variation among patients. The most suitable cases are those 60 years of age or over, with contraindication in any patient who still menstruates or who has done so within a five-year period; in such cases acceleration of the rate of growth of the carcinoma frequently results. (Dose 5-20 mg./day of stilbestrol orally.)

(b) Androgens

Testosterone propionate, in cases of breast cancer with osseous metastases, has shown some promise particularly in pre-menopausal patients. (100 mg. parenterally, three times a week for ten weeks, then 60 mg./day for 10 weeks.) Symptomatic response comes in two to three weeks (relief from pain, increase in appetite, gain in weight).⁵

However, androgen or estrogen therapy cannot yet take the place of surgery in cases of mammary carcinoma which are still operable.

Nitrogen Mustard

During the late war it was found that a class of chemical agents known as nitrogen mustards had a pronounced damaging action on cells,⁶ especially of lymphoid tissue. These compounds are closely related to mustard gas, differing in that nitrogen replaces sulfur. They exert a marked toxic action on the nucleus of the cell, with inhibition of mitosis and production of chromosomal abnormalities. The susceptibility of cells to these compounds appears to be related to their proliferative activity, and the effects are similar to those of radiation.

These nitrogen mustards are extremely toxic! Intravenous administration of these compounds in high enough dose can produce almost complete dissolution of lymphoid tissue in 24 hours. The bone marrow is also affected (especially the granulocytes) and with high enough dose complete aplasia can be produced. With large doses, degenerative changes in the epithelial tissues of the gastrointestinal tract occur and may result in a hemorrhagic enteritis.

It is possible to synthesize large numbers of 'nitrogen mustards' but so far only two chemical congeners have been used clinically, bis (beta-chlorethyl) amine hydrochloride and tris (beta-chloroethyl) amine hydrochloride. Of these two the bis compound has been more extensively used since it appears to be less toxic and equally effective.

These drugs are readily soluble in saline and must be given intravenously and quickly (within five minutes), inasmuch as these compounds deteriorate rapidly. Because of intense irritation to the tissues, producing necrosis and sloughing if leakage takes place, and to lessen the possibility of thrombosis, the mustards are given by injecting the compound through the rubber tubing during an intravenous infusion of saline or glucose. The usual single dose 0.1 mg./kg. (with a maximum single dose of eight mg.) is ordinarily given on four consecutive days. There is some variation, but the limiting factor in determining dosage is the appearance of damage to the hematopoietic tissues.

The most satisfactory clinical results have been obtained in Hodgkin's disease.⁷ In most cases there is significant temporary improvement; in some the improvement borders on the dramatic. Improvement is subjective (appetite and well-being) as well as objective, viz., rapid diminution of tumor masses, and reduction in size of the liver and spleen.

Such remissions, however, are usually brief, averaging two to three months, occasionally up to seven to eight months. Relapses generally respond to a second course of treatment, and several patients have been maintained in good health for two to three years by repeated courses at intervals of two months or more, as indicated. In a few cases, sensitivity to irradiation was thought to have been restored.

In lymphosarcoma⁸ the results reported have been similar to those of Hodgkin's, but they are less regularly obtained and not so well maintained. Some improvement was observed in most patients and good effects in others, even after they had become resistant to radiation.

Cases of chronic leukemia have not responded so well as the diseases just mentioned, although in

some instances results were obtained comparable to those following radiation.

I might also state that in polycythemia the effects with nitrogen mustard appear to be as good as those following radio-active phosphorus.

It appears from the clinical data obtained thus far, that the nitrogen mustards deserve a place in the treatment of Hodgkin's, to some extent in lymphosarcoma, and perhaps in some cases of chronic leukemia.

They possess these advantages over radiation:

1. Results are obtained more quickly.
2. They are effective in some cases that are radio-resistant.
3. G.I. disturbances are usually not so severe.

Urethane

About the time the nitrogen mustards were discovered to have their cytotoxic action, the English investigators were focusing their attention on a compound, urethane. Urethane had been synthesized and used a long time ago (1834) as a hypnotic, but later was supplanted by the barbiturates and other drugs.

The work by Templeton and Sexton on plants, and later by Haddow and Sexton on animal tumors led to the clinical trial of this drug by Paterson and her co-workers,⁹ which was soon followed by its use in this country. The results of the last three years or so have established urethane as having a place in the treatment of proliferative disorders of white blood cells, particularly in chronic myelogenous leukemia.¹⁰ In relatively early cases a remission may be obtained and maintained for at least a few months; but there is quick relapse when the drug is discontinued. The effect of urethane is much like that of radiation; and in advanced cases roentgen therapy is superior to urethane.

Stilbamidine and Pentamidine

Chemotherapy has also been tried in the case of another type of malignancy, i.e., multiple myeloma. The compounds stilbamidine and pentamidine have been used for this purpose by Snapper¹¹ and others.¹² These compounds had been used in kala-azar, and Snapper tested their effectiveness in myeloma on the association of the increase in the serum globulin which frequently happens in the two types of disease. In conjunction with a low protein diet, found essential for maximum effect, these compounds produced improvement, notably relief of pain. Treatment merely checked the disease, and relapses occurred. An interesting cytologic finding was the presence in the cytoplasm of myeloma cells of precipitates of ribonucleic acid. The significance of this phenomenon is still to be determined.¹³

Folic Acid Antagonists

Some years ago Lewisohn and his collaborators

reported that the injection of various extracts (spleen, barley, yeast) resulted in the disappearance of a certain proportion of spontaneous mammary carcinomas in mice. Later it was shown that similar results could be obtained by administration of *Lactobacillus casei* factor derived from liver.¹⁴ Due to the work of Subbarow and his associates a form of folic acid, the "fermentation folic" was later isolated and then chemically synthesized.

Farber and his collaborators¹⁵ at the Children's Hospital in Boston, following the work of Lewishohn, obtained partial remissions in a small percentage of cases in various types of malignancy following the use of folic acid conjugates notably diopteris and teropteris. The results, however, were variable and not satisfactory. The same experience with these substances was encountered by other workers, i.e., slight and temporary remissions or none at all.

However, Farber noticed that at times in children with acute leukemia there was an exacerbation of the disease following treatment with folic acid. It was therefore decided that it might be worth while to test folic acid antagonists for possible effect. A number of such compounds with antifolic properties have been given clinical trial, i.e., aminopteris, a-methopteris, amino-an-fol.

In the hands of Farber and his associates,¹⁶ and in the hands of others in different clinics throughout the country, definite, although temporary remissions have been obtained in acute leukemia in children by the use of these compounds. They are, however, toxic—and not recommended as yet for general use by the practitioner. Deaths have been recorded in a number of cities, following the injection of these compounds. Moreover, it is now known that patients who have received testosterone cannot tolerate the usual amount of aminopteris; and deaths have occurred in patients, previously treated with this androgen, following doses of aminopteris they otherwise could have tolerated.

Remissions obtained may last from a few to many months, and the percentage of patients who respond varies from zero to 50 per cent.

It is being appreciated that the action of this folic acid antagonist is not a simple anti-folic action, since large doses of folic acid fail to counteract toxic symptoms following administration of the antagonist.

Bacterial Polysaccharide

The use of bacterial metabolites in treating malignancy goes back about 100 years. In this country Coley introduced the use of his "toxin" in 1891, and although he himself persevered in his belief in, and use of, this preparation as capable of exerting an ameliorating action in the course of the disease, the profession abandoned it after a trial by some,

and practically nothing was done with this type of substance for a long time.

About 15 years ago, attention was once again directed to this type of research, and since then, largely through the effort of Shear and his collaborators, a polysaccharide has been isolated from *E. coli* and from *Serratia marcescens* which is effective in damaging animal tumors in relatively small dose.^{17,18}

This polysaccharide has been given some clinical study and, as shown by biopsy before and after administration, has been found to induce necrosis in some types of human tumors, such as fibrosarcoma, chondrosarcoma and lymphomas.

Although it affords us a promising lead, its clinical use is not recommended because of its toxicity. Gastro-intestinal disturbances, onset of fever and production of marked fall in blood pressure necessitate the most careful clinical management of the patient,^{17,18} even in clinical researches with these materials.

I should like now to mention a few substances which have aroused considerable professional and public interest from the standpoint of treating cancer, but about which there is no justifiable evidence concerning their value in this respect. Possibly some of you have been consulted by your patients concerning them and their use in treating malignancy.

1. AF-2

Information about this substance came from Italy through an American-Italian newspaper. From the meager information available, it is a "serum," devised by a Prof. Francisco Guarnieri, prepared from the livers of "cancer-resisting" animals i.e., goats, pigs, sheep. No data have been available, from either tumor-bearing animals or patients, in support of the claims advanced.

2. H.11

In 1930,¹⁹ Thompson (from England) reported that an acid-alcoholic extract of parathyroid glands retarded the growth of transplanted Twort carcinoma in mice. Later it was stated that a substance possessing similar ability could be extracted from normal male urine. It is this substance, derived from this source, which was designated as H.11.

Recently Williams²⁰ presented the results of over 1300 cases of human malignancy treated with H.11 and claimed that in 63 per cent of this number there was clinical evidence of regression or arrested growth of the tumor.

In 1944, the British Medical Research Council appointed a committee²¹ to assess the evidence on which claims for H.11 were based. The committee conducted its inquiry by (1) an examination of case histories supplied by the Hosa Laboratories (which produce H.11) and (2) an experimental

investigation on the effect of H.11 on various tumors in mice, including those used by the originators of H.11.

The committee's conclusions were (1) that it was not possible to deduce from an analysis of the clinical records that H.11 had any effect either on the rate of growth of cancer in man or on the clinical course of the disease and (2) experiments on tumors in mice carried out under direction of Hosa Laboratories could not demonstrate any tumor inhibiting action by H.11.

3. KR

For the past several years Roskin and his associates (Russia) have been publishing positive findings with regard to the therapeutic use of an endotoxin prepared by lysing *Trypanosoma cruzi* (Chagas' disease). Successful results have been claimed for several types of human malignancy as well as in experimental tumors of various kinds.

A number of attempts at experimental confirmation of this investigation have been made. Perhaps the most extensive have been those of Hauschka and his collaborators.²² These investigators have used endotoxin as well as infecting tumor bearing animals with living organisms.

No effect was obtained following the use of endotoxin. Some retardation was obtained in tumor bearing mice following infection with the living organism; but this appeared to be non-specific as it was accompanied by loss in body weight and parasitemia of vital organs. When the disease was brought under control by drug treatment, the tumor resumed growth. Cancer cells were rarely parasitized.

At the National Institutes of Health a survey was recently completed in which KR prepared from eight different strains of *T. cruzi* (including the Wellcome strain used by Roskin) were tested against a transplanted mouse sarcoma (S.37). No tumor retarding effect was found.²³

At the present time, about a half dozen investigators throughout the world have reported negative results in attempts to confirm Roskin's findings. The single exception, a paper by Malisoff, cannot be considered as tenable for several reasons, as has been stated by Hauschka.²⁴

For the interested person, attention may be drawn to an informative editorial in the Journal of the American Medical Association in which the alleged value of several so-called cancer cures is discussed.²⁵

It has been evident, in this brief review of chemical agents which have been given some clinical study, that there has been no mention of a "cure."

To date there have been no "cures." At best there is palliation, remission for a few weeks, or in most favorable cases perhaps for several months.

Nevertheless, the question today is no longer "is cancer chemotherapy possible?" The encouraging fact is that it *has been done*—but within limits. So far the limits are disappointingly restricted, compared with our objective. Our aim now is to extend those limits to an ever wider degree until chemical substances which can produce increasingly beneficial and more lasting results to the patient become available.

I don't know when such a realization of our aim will be achieved. My feeling is that it will be a long and thorny road, but I am optimistic enough to believe that with laboratory and clinic collaborating in the long hard drive, that day will come.

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The Treatment of the Leukemias and the Malignant Lymphomas

Talbert Cooper, M.D.

Rochester, Minnesota

While, practically speaking, leukemia and malignant lymphoma remain incurable diseases, we have reason to hope that the continued combination of efforts of men working in the clinical and experimental fields may yet provide us with more useful answers to the questions that puzzle us.

In the clinical field, therapeutic efforts at the present time consist essentially in the administration of various cytotoxic or clearly destructive agents in the rather forlorn hope that these substances will do more damage to the neoplastic cell than to the normal cell. As yet the differential in degree of vulnerability has been too fine to permit more than some deceleration of the neoplastic process.

In considering the value of so-called therapeutic agents in cases of leukemia and malignant lymphoma one must remember the decided variability of the clinical course pursued by each individual case before attributing changes to specific efforts on the part of the physician. To my knowledge there is on record no "control" series of untreated patients having either type of disease. However, all of us have from time to time observed occasional patients who somehow escaped specific therapy but nonetheless prospered, in a relative sense.

With the exception of certain well-localized forms of malignant lymphoma there is no incontestable evidence that the therapeutic measures to be discussed result in prolongation of life, although there can be no doubt that palliative relief of considerable, if temporary, degree fairly consistently follows their application.

Surgery

While the established case of malignant lymphoma usually presents the characteristics of a widespread disease, there is considerable evidence to indicate that early lymphosarcoma or Hodgkin's disease, particularly the paraneoplastic variety, may be a localized process. Surgical extirpation of such lesions has resulted in apparent "cure" in an encouraging number of instances. This has been particularly true in cases of lymphosarcoma of the head and neck.

This experience, (as reported by Hellwig¹, Gall², Rhodes³ and others) emphasizes the urgency of early diagnosis in such cases if anything more than palliation of symptoms is to be offered, since extension of the process may occur rapidly. In substance this means that one must expedite the biopsy study of any unexplained enlargement of lymph nodes. It

may be reasonably suggested that tonsillectomy in adults be followed routinely by microscopic examination of the tissue, since lymphosarcoma not uncommonly arises in the upper part of the respiratory passages.

While one should be on watch for patients possibly amenable to surgical therapy it is unfortunately true that the great majority of patients will not qualify for this type of management.

Irradiation

A. *Roentgen Irradiation.*—After 45 years roentgen irradiation remains the most widely employed and most consistently satisfactory means of producing clinical remissions in this group of diseases.

(1) *Chronic Leukemia.*—Pressure symptoms, anemia and general systemic manifestations constitute the common indications for treatment. There is no reason to feel that "prophylactic" administration of roentgen rays or other agents significantly slows the progress of leukemia. Treatment may be wisely withheld in asymptomatic cases. This is particularly true in chronic lymphatic leukemia in the older age groups, wherein the disease is often relatively benign and patients die as often "with" the disease as "of" it.

The response in patients with symptoms is generally best in the myelogenous type. Symptomatic lymphatic leukemia is less dramatically influenced and monocytic types of the disease obtain a satisfactory remission less often than either. In general, the morphologic types respond in similar degree to the other therapeutic agents employed.

Variations in technic of administration seem relatively unimportant—good results having been obtained by experienced therapists with various methods—and should be tailored to fit the individual case.

The duration and amount of treatment in a single course are determined by the clinical and hematologic response as estimated by daily examinations and leukocyte counts.

Remissions last for variable periods, usually three to six months. Treatment is repeated on development of signs of imminent relapse.

Refractoriness eventually becomes apparent in all cases. Other agents than roentgen rays may be temporarily effective thereafter but none are consistently so.

Despite the low leukocyte count in cases of leukopenic leukemia a fairly wide margin of safety ap-

pears to exist and roentgen radiation can be safely and beneficially administered if the results are carefully observed.

Irradiation sickness is unfortunately a common accompaniment of this form of treatment, being particularly severe with irradiation over the upper part of the abdomen.

(2) *Acute Leukemia*.—Cautious therapy may be administered locally in the occasional case with distressing pressure symptoms but roentgen radiation is ordinarily useless and possibly harmful.

(3) *Malignant Lymphoma*.—Roentgen therapy may result in a dramatic temporary remission of symptoms within a period of very few days.

Again the technic employed should be fitted to the needs of the individual case. Systematic, segmental exposure of all possibly involved areas is carried out and definite sites of disease are more aggressively attacked.

The amount and duration of therapy depends on the response and tolerance of the individual patient. Relatively acute forms must be treated with caution.

Refractoriness eventually develops in all cases, earlier in the more malignant varieties, although these may respond encouragingly in the beginning. When the process has been well localized and treatment has been aggressively administered, occasional "cures" may follow.

B. *Radium Irradiation*.—This has been employed but it offers no advantages of consequence, is available in too few localities and is a relatively expensive form of treatment.

C. *Radioactive Isotopes*.—During the past ten years radioactive isotopes have been employed in the treatment of neoplastic diseases. Radioactive phosphorus, P^{32} , has been used most extensively in treatment of disorders of the hemopoietic system.

In leukemic mice the greatest concentration of P^{32} was found in the infiltrated bone marrow and tissues such as the lymph nodes, liver and spleen. However, the leukemic cells were found to contain only two to three times as much of the isotope as the normal cells⁴. Studies on thyroid carcinoma indicate that preferential absorption by neoplastic tissue may have to reach a level of 50:1 as compared with normal cells if control of the growth is to be effected⁵.

P^{23} may be administered orally or intravenously. It has not provoked irradiation sickness. Theoretically, it provides a means of exposing neoplastic tissue to beta radiation for extended periods and it should reach all foci of disease.

(1) *Chronic Leukemia*.—In chronic myelogenous leukemia the therapeutic results of P^{32} in general have been similar to those obtained with roentgen radiation⁵. As with roentgen therapy, re-

sults have been more remarkable in cases of myelogenous leukemia than in lymphatic or monocytic leukemia. Enthusiasm has been dampened at the Mayo Clinic by the occurrence of acute leukemia as the terminal event in 79 per cent of the cases of chronic leukemia in which P^{32} was used. Such a development may be anticipated in approximately 30 per cent of cases in which roentgen therapy is used. One cannot comfortably expose patients who have chronic leukemia to treatment that appears to promote acute regression of the process.

(2) *Acute Leukemia*.— P^{32} has not been shown to alter the clinical course of such cases beneficially.

(3) *Malignant Lymphoma*.—Encouraging results have been occasionally reported but the great majority of patients have responded poorly.

Chemical Agents

A. *Nitrogen Mustards*.—As a result of extensive studies during World War II knowledge of the effect of these substances on various tissues was extended. When administered in sublethal dosage the action of the mustards was most pronounced on those tissues which normally are actively proliferative, particularly the mucosa of the gastro-intestinal tract and the hemopoietic organs.

The over-all effects are quite similar to those of roentgen radiation. In solution these substances form a cyclic cation with liberation of chloride ions. Apparently, this cation interferes with the operation of certain cellular enzyme systems, inhibits mitosis and may produce chromosomal abnormalities. The action is short-lived and a region is completely protected if its blood supply is interrupted for five minutes after the injection of nitrogen mustard⁶.

The relatively selective action of these substances on hemopoietic tissue led to preliminary trial in leukemic and sarcoma-bearing mice and finally to use in the clinical field.

An intravenous injection of 0.1 mg. per kilogram of body weight (methyl-bis-(beta-chloroethyl)-amine hydrochloride is commonly used) daily for four consecutive days constitutes the customary course⁷. Toxic effects in the form of nausea, vomiting and occasionally diarrhea consistently follow within two to four hours of the injection but rarely cause serious difficulty. More important is the common depressant effect on bone marrow activity, the degree depending on its pretreatment status and the size of the dose. Marked leukopenia and thrombocytopenia may follow. However, recovery in most cases is rapid and apparently complete, usually permitting another course of treatment within five to six weeks.

(1) *Chronic Leukemia*.—Remissions, clinically and hematologically similar to those produced by roentgen radiation, have been produced in early cases. Treatment in advanced cases has been uni-

formly fruitless and, in view of the possibility of grave damage to remaining normal marrow elements, it may be harmful.

(2) Acute Leukemia.—The nitrogen mustards have no demonstrable value in treatment of these problems.

(3) Malignant Lymphoma.—Hodgkin's disease, including some advanced and roentgen-ray resistant forms of the disease, has been most benefited by treatment with the nitrogen mustards. The results have sometimes been spectacular and remissions lasting a few weeks to several months have been consistently produced. Systemic manifestations rapidly subside, followed by shrinkage of lesions in hemopoietic and other organs. The average remission has, however, been shorter than that produced by roentgen radiation and certain local lesions respond less favorably. Repeated remissions may be produced and sensitivity to roentgen radiation has been restored in some instances^{6,7}. Nitrogen mustard has been found useful when employed as an adjunct to roentgen radiation in cases with systemic and localized manifestations of the disease.

In lymphosarcoma results have been similarly beneficial in about 30 per cent of cases⁶. In the highly malignant forms of the disease treatment with nitrogen mustard has been relatively ineffective.

Other more effective and less toxic substances of this type may be introduced in the future, but it seems overoptimistic to hope that they might possess the degree of selective activity demanded of a curative agent.

B. *The Urethanes*.—Leukopenia was observed as a side effect in patients and experimental animals under treatment with the urethanes for various neoplastic diseases⁸. As a result, these substances were given a therapeutic trial in leukemia and were found to have some palliative effect⁹.

Studies in mouse and human leukemia indicate that urethane (ethyl carbamate has been most widely used) acts as a mitosis arrester. Its greatest effect is exerted on cells at an immature stage of development¹⁰. Megakaryocytes are more resistant than other bone marrow elements. Leukemic foci in various organs may be reduced in extent. These changes are, however, inconstant and may not occur despite marked changes in the peripheral blood picture. The changes noted are roughly similar to those provoked by roentgen radiation or nitrogen mustard.

Urethane may be given orally in a dosage of two to three gm. daily until a reduction in the total leukocyte count occurs. This usually requires a period of 10 to 30 days of treatment. Thereafter the dosage is adjusted in an effort to maintain the total leukocyte count at near normal levels¹¹. Hematologic relapses often occur within 10 to 20 days if

treatment is discontinued and efforts to reinstitute control may be thwarted by the appearance of a refractory state.

Anorexia, nausea and vomiting (from gastric irritation) are the difficulties most commonly encountered in the course of treatment. These symptoms may be controlled by a reduction in dosage and it is not often necessary to discontinue treatment entirely on this account. Severe bone marrow depression has been reported as a result of therapy with this substance¹². However, such a misfortune is apparently a rare complication if the dosage is properly controlled by periodic studies of the blood. Urethane seems to be a less toxic agent than other agents used in the chemotherapy of leukemia and malignant lymphoma.

(1) Chronic Leukemia.—In chronic leukemia, particularly of the myelogenous variety, urethane may effect a remission clinically and hematologically similar to that resulting from roentgen therapy. The results, are, however, less consistently produced and have been well sustained in only a third of the patients treated (Table 1). As is the rule with all pal-

Table 1
*Urethane (Ethyl Carbamate) In Treatment of
Chronic Myelogenous Leukemia*

<i>Result</i>	<i>Cases</i>
Satisfactory response	11
Early improvement followed by refractory state	11
No significant change	5
Worse under treatment	6
Total	33
Deaths	9

liative agents, best results are obtained in early phases of the disease. Relapse under treatment may occur and in some instances hematologic changes of an encouraging character were accompanied by all evidences of clinical failure. At present observations are in progress to determine if remissions induced by roentgen radiation can be prolonged by interim therapy with small doses of urethane.

(2) Acute Leukemia.—The course of acute leukemia is not appreciably influenced by treatment with urethane.

(3) Malignant Lymphoma.—Urethane has no demonstrably consistent effect on the clinical course of Hodgkin's disease or lymphosarcoma, although enlarged lymphoid structures may be reduced in size.

C. *Arsenic*.—Therapy of chronic leukemia with arsenic in the form of Fowler's solution (potassium

arsenite) should be briefly mentioned since there has been some recent revival of interest in its use. It has been most effective in treatment of chronic myelogenous leukemia and produces remissions fairly consistently. Occasionally it has some effect in roentgen-ray refractory cases. Relapses quickly follow when medication is discontinued.

The pruritus of Hodgkin's disease may sometimes be alleviated by treatment with Fowler's solution.

Arsenic has the advantage of ready availability and is less expensive than other forms of treatment. However, its toxic effects are often troublesome and sometimes serious.

Antivitaminic Agents (Folic Acid Antagonists)

Whereas the clinical effectiveness of the agents previously discussed was learned incidentally or as the result of trial of substances having relatively non-specific cytotoxic properties, folic acid antagonists were devised as a therapeutic agent for acute leukemia on a somewhat more rational basis.

Farber and associates¹³ reasoned that folic acid antagonists might be of value in the treatment of acute leukemia after observing postmortem evidences of an acceleration of the leukemic processes in patients who had been treated with folic acid or folic acid conjugates. SubbaRow and others¹⁴⁻¹⁶ developed a series of folic acid antagonists with the assistance of cultures of *Streptococcus faecalis*, the normal growth of which is dependent on the presence of folic acid.

Aminopterin (4-aminopteroylglutamic acid) is the most potent substance available at present and has received the widest clinical trial.

Farber and his associates¹³ observed clinical and hematologic remissions following administration of this substance in 10 of 16 cases of acute or subacute leukemia in children. At the Mayo Clinic five of 18 children but only one of 23 adults have been similarly benefited¹⁷.

The results are sometimes spectacular, with striking clinical improvement accompanied by a restoration of a hematologic picture approaching normal. The improvement has been sustained for periods of months in some instances but relapse has eventually occurred after treatment has been discontinued.

Aminopterin exerts decided toxic side effects: ulcerative stomatitis, anorexia, crampy abdominal pain, bloody diarrhea and alopecia have developed when treatment is carried on long enough to influence the blood picture materially. In some instances extreme marrow pancytopenia has been induced^{13, 17} and apparently sometimes has hastened the patient's death. However, development of marrow pancytopenia may be followed by recovery of the marrow and remission as described previously. An interesting side effect on the erythrocytic elements of the marrow has been the occasional conversion of nor-

moblastic cells to a type resembling the megaloblasts of pernicious anemia¹⁷.

While it may be reasonably hoped that continued investigations of this type will eventually lead to a better understanding of the leukemias, it should be emphasized that no cures have resulted from treatment with aminopterin and that in adults even temporary remissions have been rare.

Summary

Numerous agents are available which exert a measurable palliative effect on the course of chronic leukemia, but none demonstrably prolong life.

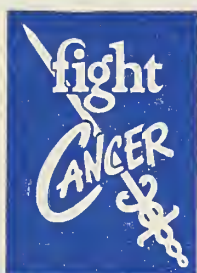
There is at present no satisfactory means of treating acute leukemia although our long-standing hopelessness in regard to such cases has been somewhat modified by the recent clinical introduction of the folic acid antagonists.

Early diagnosis, followed by surgical removal of diseased tissue or aggressive local roentgen radiation or both, offers the only hope of cure in cases of malignant lymphoma at the present time.

Some studies now in progress at the experimental level suggest that a widening variety of therapeutic agents may be introduced and perhaps the outlook for the unfortunate victims of these diseases may be considerably brightened.

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The Physical Examination*

Henry M. Winans, M.D.

Dallas, Texas

When I was assigned this topic by your program chairman there were no restrictions imposed in regard to what direction the discussion might take. Having been allowed this dangerous amount of leeway I am going to take an attitude which I fear some may consider to be iconoclastic if not actually subversive.

I am not going to discuss the matter of a routine physical examination made in the course of ordinary diagnostic procedures, although this topic can be made a very interesting one as all of you who have read Waring's¹ recent paper on the subject will agree. Instead I wish to consider the annual or semiannual so-called health examination. We are advised by insurance companies and frequently by our own medical societies to have routine and regular examinations and to impress the necessity for this upon our patients. It seems to me that we might well consider what are the aims involved, how nearly do we achieve the goal, and what if any are the limitations which are placed upon us.

I take it that the aim of the physical examination is threefold:

1. To detect the presence of serious organic disease.
2. To recognize diseases which are in their incipency and which are therefore presumably remediable.
3. With the physical examination as a basis, to advise the patient in regard to his hygiene in such a way as to keep him in good health.

If these aims be clear and fully stated certainly one could have no quarrel with them and indeed they represent the highest goal of the medical profession. But before we become self-congratulatory over this matter I think we should appraise as carefully as possible whether we actually approach their consummation and attainment. To do this it might be

well to consider what is in the mind of the patient who comes in for an annual check-up.

Since the decision to have an examination is voluntary and not dictated by the emergency of illness the patient first of all expects that the cost of such an examination will not be too great. Exactly what charge he may have in mind I suppose varies with his economic status and the locality in which he lives but a general idea has already been given to most of them by insurance companies who ordinarily pay five dollars and it is natural for the patient to suppose that if an insurance company will assume the risk of several thousand dollars upon his life after a five dollar examination, the physician could well hazard an opinion and give advice for the same amount. He is not aware, of course, that when he is examined for insurance he becomes a part of statistics in which a relatively few observations regarding his physical condition place him in a category where the risk of undetected disease is diluted by many thousands.

Nevertheless there is some sum only a few multiples of this five dollars which the patient is willing to pay. We cannot alter this fact and in considering how far the annual physical examination may go we are obliged to be limited by the financial bounds. The effect of this limitation will be discussed later.

The patient also has the expectation that if he has such conditions as brain tumor, tuberculosis, or cancer of various organs in the body, these will be uncovered by the routine examination, and finally he also expects that if there is any disease in its incipency, be it anemia, hypertension, or nephritis, this too will be discovered and that he will be given appropriate advice to prevent such development. When we accept, therefore, the patient for a routine physical check-up we also accept the responsibility for all of this, namely that the examination will be conducted at a reasonable cost, that we shall detect any and all physical impairments, and that we shall

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be able to advise the patient in such a way as to protect him against the development of all but the most accidental disease until at least the time of the next examination.

Recently, due to magazine publicity, an increasing number of patients have been presenting themselves for examination particularly for the detection of cancer. Certainly we can have no quarrel with this but if the patient has no symptoms and no findings at the time of examination we are faced with a very serious problem.

To what extent this involves us in the necessity for the most prolonged and searching investigation may be shown by the consideration of a single disease, namely cancer of the stomach. It is well known that in only a few cases is this condition recognized sufficiently early to allow for surgical cure. This does not arise because of any perversity on the part of the patient, or even lack of knowledge on the part of the physician, but simply because the onset is insidious and there are actually no early symptoms or physical findings. So well is this recognized that the suggestion has been made that all individuals after a certain age should have x-ray studies of the gastrointestinal tract at regular and frequent intervals.

It immediately becomes apparent that for this one thing alone a physical examination must include gastrointestinal x-rays, and since what is true about cancer of the stomach is also true of cancer elsewhere in the digestive tract and in the lung and kidneys as well, the x-ray studies must be extended to include them. I give this as an example not to reduce the matter to absurdity but merely to bring up one of the primary difficulties, and it should be readily admitted that the skillful clinician appraising the symptoms properly and perhaps finding anemia or occult blood in the stools will be able to decide upon the necessity of x-ray studies but still will not be able to be absolutely sure that cancer in an early stage does not exist.

Now as regards a condition which may be in its early stage and for which the patient expects advice for the purpose of preventing further development, it might be of value to consider hypertension. The presence of this condition is readily detected by the use of the sphygmomanometer, and let us suppose that the patient presenting himself for examination shows moderate hypertension. What is our attitude to be in regard to that? At the present time we do not know the cause for essential hypertension although we are perhaps on the threshold of important discoveries.

There are, however, three conditions which may produce hypertension not based upon nephritis; these are, adrenal tumor, coarctation of the aorta,

and the so-called Goldblatt kidney. Coarctation of the aorta may ordinarily be recognized by the simple expedient of taking the blood pressure in the legs as well as in the arms, but the Goldblatt kidney requires the services of the urologist and the roentgenologist for its detection, and the diagnosis of an adrenal tumor leads into very much more extended fields of endeavor. Yet the patient with early or even later hypertension deserves a consideration of these causes, however extensive the investigation may have to be.

Furthermore, if none of these causes is present we have, by detecting the hypertension, obligated ourselves for years to come for if the patient reaches the end stage of arterial degeneration or cardiac failure or cerebral thrombosis or hemorrhage he may well look back and wonder why something was not done to prevent all of this when the hypertension was first discovered.

One more example may serve to light the difficulties with which the health examination deals. Recently I attended a forty-six year old man with posterior myocardial infarction. This patient had been examined some two months previously by one of the most competent local internists. The examination had been more than casual for the patient's eyegrounds had been studied, x-ray studies had been made of the chest, and an electrocardiogram taken. At the time of the examination there was no reason to believe that the patient was in any danger whatever from myocardial infarction. It was a matter of great difficulty, however, to explain to the patient and his family how he could have been told two months previously that he was in perfect condition and yet now be suffering from a serious and disabling disease. The situation was the fault of neither the doctor nor the patient but arose because of the implied protection against the future which the examination seemed to give. Instances such as this could be multiplied and I am sure that almost every one here could supply several such examples.

The question of cost to the patient might be considered. In many instances the patient comes as has been noted with a preconceived idea as to what the charge for this service should be. Considering the many avenues into which the investigation is apt to be directed it is impossible to set a routine charge for this attention. It is best to defer a discussion of the cost until a case history has been taken. The problems which then seem to need looking into should be noted and an approximate cost of the studies arrived at. The patient should then be informed of the number and nature of special studies to be undertaken. It is a peculiarity of the physician that he hesitates to tell the patient that

nothing is wrong. Furthermore the patient himself is much more willing to pay for positive findings than for the reassurance of negative ones. A discussion of the charges in advance will prevent him from making a statement which most of us have heard more than once and which goes something like this: "I went to see the doctor just to find out if anything was wrong with me. He didn't find anything but sent me a terrible bill."

The question of periodicity of the examination also deserves some consideration. Is it possible to say that a health examination should be conducted annually or semiannually? Certainly not if we expect that the examination will detect disease in its early stages for even the passage of a month may allow many conditions to go beyond a remediable stage. In this regard it would be much safer for the physician to take the opportunity of examining the patient carefully whenever he presents himself, no matter how minor the complaint. If this is done, not only is the patient impressed by the thoroughness of his medical attendant but such an examination is conducted without the handicaps inherent in the routine health examination.

The dilemma in which the medical profession finds itself, therefore, is that when a patient presents himself for a health examination it must be decided whether an extensive and expensive program will be embarked upon, one which in reality can still not guarantee to the patient that he does not have some serious disease in its incipency, and much less that he will not in the next few months develop such a condition, or whether to give a standard type of routine physical examination with only perhaps a blood count and examination of the urine.

It would seem apparent that the first course cannot be followed because of the expense and the impossibility of attaining the ultimate goal of the examination. That leaves the second expedient and the question in regard to that is whether we should make any effort whatever to have our patients undergo a regular examination. It is impossible to answer this in the negative because all physicians are doing just this and they could not very well say to the patient, "Since there are so many difficulties in the way, we will not examine you at all unless you have some actual illness or complaint." Furthermore there are many remediable conditions of which the patient may be unaware and which the examination

will bring to light, and the check-up is therefore of value for that reason alone.

On the other hand, for the sake of our own standing and protection, a better understanding ought to exist between the patient and the doctor in regard to just what such an examination may accomplish. This might be done by giving to the patient, after his examination and conference in regard to the results, a printed slip somewhat as follows:

On such and such a date you were carefully examined and the following conditions were found:

.....

You are advised to take the following measures:

.....

It is only fair to state that this condition is as of the above date. You cannot be promised that there may not have been some unrecognizable disease present in such an early form that it produced no symptoms or findings, and furthermore it is impossible to promise that you may not develop some such condition in the following months. You are, therefore, advised to report promptly any change in your feelings or the development of any symptoms whatever which you did not have at the time of your examination.

CONCLUSIONS

The annual or semiannual examination is of value but its limitations should be recognized by the physician and especially so by the patient.

There can be no standard charge for this type of examination. Instead the cost should be appraised after the physician has some idea of what may be necessary and a discussion of the charges for this should be had at that time.

There are many involvements which may be present in their incipency at the time of the examination which not even the most extended diagnostic procedures will uncover even if it were practicable from the standpoint of expense and number of specialties involved to apply them. It would seem desirable to make these facts clear to the patient who presents himself for examination preferably by putting it into writing.

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A Comparative Study of Neo-Natal Infant Mortality at St. Francis Hospital, Wichita, Kansas

J. W. Dennis, M.D.

New Britain, Connecticut

The general practitioner as well as the specialist has been made conscious in recent years of the success won in the struggle against infant mortality in the United States. From statistical data compiled by governmental and concerned agencies, it is known that deaths under one year of life have declined from 100/1000 births in 1915 to 54/1000 in 1937.^{1A} There is a tendency to disregard the important facts that in practically the same years deaths under one month have dropped only from 44 to 33/1000, and under 24 hours have remained constant at 15/1000.^{1B}

Determination of such rates has been a difficult problem, always limited by the absence of a standard system for study of infant deaths. Potter and Adair^{1C} have deplored inaccurate and incomplete birth registration practices, lack of uniform classification in relation to age and weight, use of individual classifications, and inadequate post-mortem examination. Another barrier is the failure to define terms.

A few centers have attempted to avoid these obstacles by making analyses of their newborn admissions. Obstetrical or university hospitals generally prepare this type of contribution. The purpose of this report is to present a summary of neo-natal infant mortality and causes of death in a private midwestern general hospital of 70 obstetrical beds. Included are autopsy ratios and figures on existing work contained in the literature.

Material

At St. Francis Hospital during the war years,

1942-46, there were 10,477 births and 470 infant deaths. All were delivered by physicians, either specialist, family physician, or house officer. The service was covered by one resident and one intern, who commonly assisted at delivery. Over 95 per cent of cases were of the white race.

In Table I mortality is listed on the national level and for the selected hospitals. Data from the Chicago Lying-In,² University of Pittsburgh,³ and Hartford⁴ hospitals were fitted into the survey for purposes of comparison. The tables and figures which appear below provide additional information from the same sources. Table I shows that all but one hospital covered a period of five or more years, and that in all there are large numbers of cases. All were located in cities of over 130,000 population.

The study was not envisioned prior to 1947. At St. Francis, only term and pre-mature births are considered, including 21 readmissions. Any infant which may have died on the outside after dismissal is not included. Also excluded are fetuses expiring before the time of viability, such as abortions. The neo-natal period is set at one month, following the lead of Potter and Adair and the British Pediatric Association.⁵

To clarify the terms "newborn," "deadborn," etc., liberty has been taken to divide infant deaths into those which are "liveborn" or "stillborn." A stillbirth is herein defined as any viable infant having no heart or respiratory action at delivery.

TABLE I
MORTALITY RATES

Hospital	TYPE	No. of YEARS	TOTAL BIRTHS	TOTAL MORTALITY					
				Liveborn		Stillborn		Combined	
				#	%	#	%	#	%
NATIONAL				70,000	(Av. = 3.26) 2.5-4	72,000	3.5		6-7.5
CHICAGO LYING-IN	OBSTETRICS	10 (1931-41)	27,321	559	2.04	614	2.25	1173	4.29
U. of PITTSBURGH	UNIVERSITY	5 (1939-43)	16,413	413	2.5	476	2.9	889	5.4
HARTFORD	N.P.A.	1 (1942-43)	4,243	76	1.8	43	1.0	119	2.8
St. FRANCIS	CHURCH	5 (1942-46)	10,477	260	2.48	210	2.0	470	4.48

Mortality Rates

Those at St. Francis are shown in Table I to be 2.48 per cent for liveborn, 2 per cent for stillborn, and 4.48 per cent for both combined. In Figure 1 these are compared to percentages nationally and at the other hospitals. All four hospitals are well under the national rates^{1D, 5, 12} in all categories, including

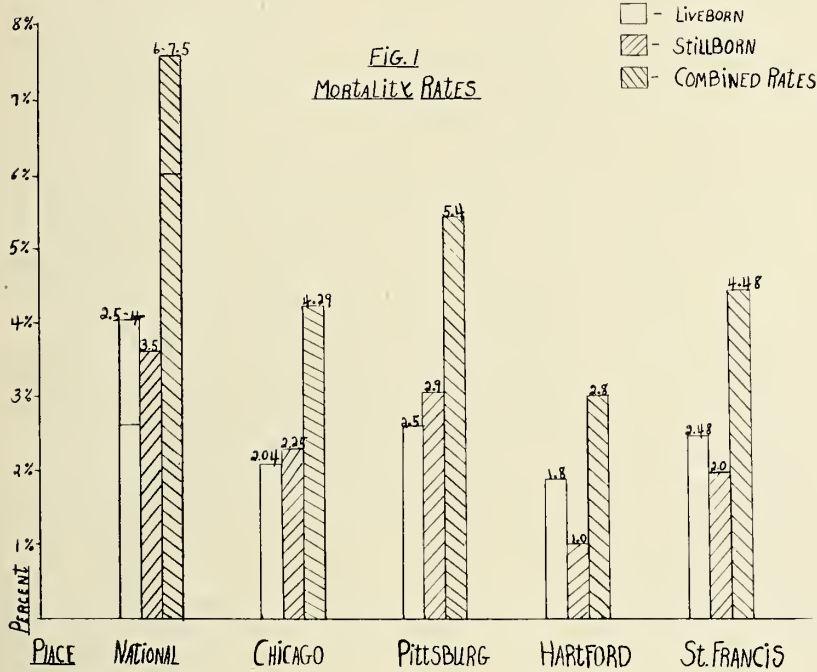


Figure 2 gives liveborn death per 1000 births. Again, all hospitals are below the national average. They are relatively the same in incidence and years selected for study.

To reach the national average, one may postulate (1) that there is a large group of births above the average and (2) that the obstetrical, university, and

large general hospitals are not in this group. Births in smaller hospitals and particularly births in areas without hospitals may form this group. The mortality under one year of life was much lower in 1945, when 79 per cent of infants were delivered in hospitals,⁷ than in 1941, when only 60 per cent of infants were so delivered.⁸

In Figure 3, the annual mortality for liveborn follows a gradual and irregular downward curve. There is less of a tendency for shifting among the stillborn. The largest number of deaths in a single month is nine in October, 1944, in a total of 224 births (monthly average is 174). In the second

the low level (2.5 per cent) of the national range for liveborn deaths. Although stillbirths are low, the values may not be too significant, since the national summaries often contain unviable cases. The states of Missouri and Maryland and the city of New York^{1c} require reporting of any product of conception, and these reports go into national rates.

Generally, the Chicago analysis has the somewhat better record. Stander⁶ writes that three per cent is the expected mortality rate in a conducted obstetrical hospital. The low rates at Hartford raise the question of what special precautions or methods are employed, pre- and post-natally, which may be of use to others.

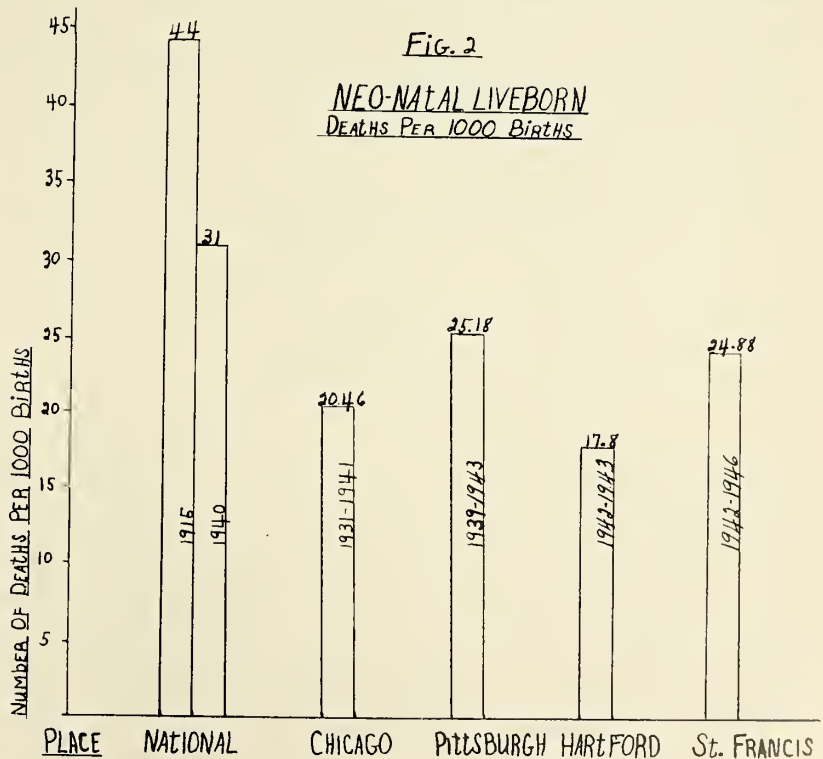
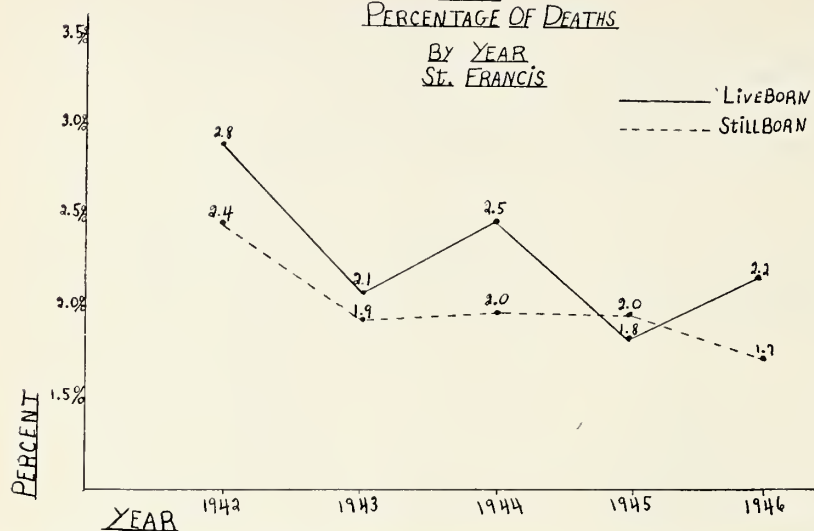


FIG. 3
PERCENTAGE OF DEATHS

BY YEAR
ST. FRANCIS



malformity is usually considered a fourth.^{1E} This pattern is proven by all four hospitals.

It is evident that there is considerable variation of a particular cause and between leading causes from place to place. Prematurity is judged on body weight by some, and on the period of gestation by others. It is sometimes responsible for secondary injury, anoxia, and infection. Anoxia often becomes a waste basket, although it rightfully includes deaths from cord obstruction, from qualitative

half of 1946, there are 229 to 263 births per month. There are no seasonal tendencies.

Figure 4 demonstrates by number the autopsy totals at St. Francis. Sufficient (43 per cent) were obtained to be of significance (see Table II). Autopsies were performed in 81 per cent at Chicago and in 42 per cent at Hartford, so that the Chicago figures are probably the most reliable. A study similar to that of Chicago, and having 90 per cent autopsy, has been made at the New York Lying-In Hospital.⁹

Causes of Death

These are compared to liveborn in Figure 5. The national breakdown (1936) did not enter into all causes. Syphilis and causes unknown or undiagnosed are not given. Differences in terminology, in neonatal periods, and in geographic location do not fundamentally invalidate the comparisons.

It was necessary to adapt several terms to fit the figure. Focal pneumonia, septicemia, and enteritis are placed under "infections," "atelectasis" is converted or added to "anoxia."

Birth injuries, asphyxia neonatorum, and conditions associated with prematurity are mentioned by Stander⁶ as the major cause of death. Congenital

changes in maternal blood, and from interference with oxygenation of fetal blood. So it appears that there is a wide discrepancy in standards of diagnosis.

FIG. 4
ST. FRANCIS—NUMBER OF AUTOPSIES

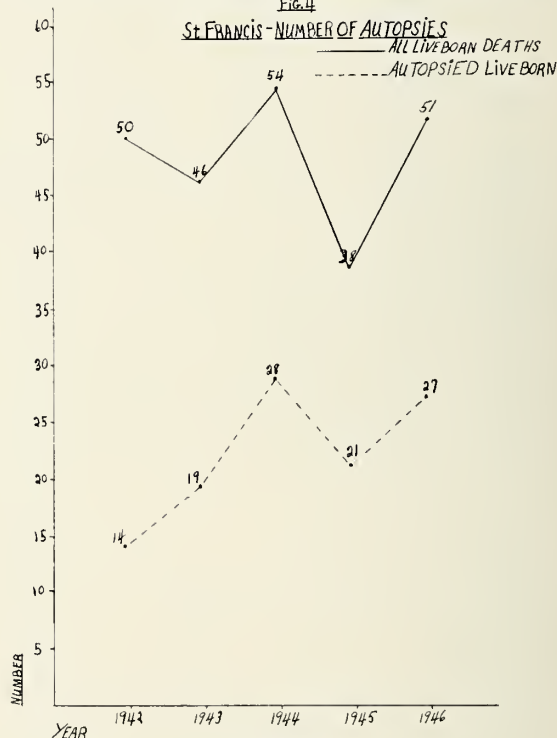


TABLE II

LIVEBORN: St. Francis Hosp., 1942-46; 10,477 births; 260 deaths; 120 autopsies; 46% autopsy.

Cause of Death	Clinical		Autopsy	
	%	#	%	#
Primary Prematurity	45.0	117	36.6	44
Infections	15.0	39	18.3	22
Congenital Malformations	12.7	33	19.1	23
Anoxia	6.2	16	9.1	11
Birth Injury	3.5	9	5.0	6
Atelectasis	3.5	9	2.5	3
Erythroblastosis	3.1	8	5.0	6
Hemorrhagic Disease	1.5	4	2.5	3
Syphilis	0.4	1	0.0	0
Sedation (*)	0.4	1	0.0	0
Maternal Diabetes (*)	0.0	0	0.8	1
Unknown	8.8	23	0.8	1(*)

(*) : 1 case.

TABLE III

STILLBORN: St. Francis Hosp., 1942-46; 10,477 births; 84 cases; autopsy only; autopsy 40%.

Cause of Death	Autopsy	
	%	#
Anoxia	30.0	25
Congenital Malformations	19.0	15
Primary Prematurity	15.5	13
Maceration	15.5	13
Erythroblastosis	9.5	8
Syphilis	3.6	3
Birth Injury	2.4	2
Infection	2.4	2
Maternal Pathology	2.4	2
Atelectasis	1.2	1

The unexpectedly high incidence of "infection" at St. Francis is not readily explained. Most are bronchopneumonia. Syphilis is excluded. Sedation was widely used in the first stage and ether in the second stage of labor, but not more so than in the ordinary general hospital.

The high Hartford incidence of malformations and the general low incidence of injuries as compared to the national level are striking. The reason for the low injury rate at St. Francis is not known. Divers delivery techniques, frequently with the aid of low forceps, were used. None of the cases are premature, whereas in other studies they might have been.

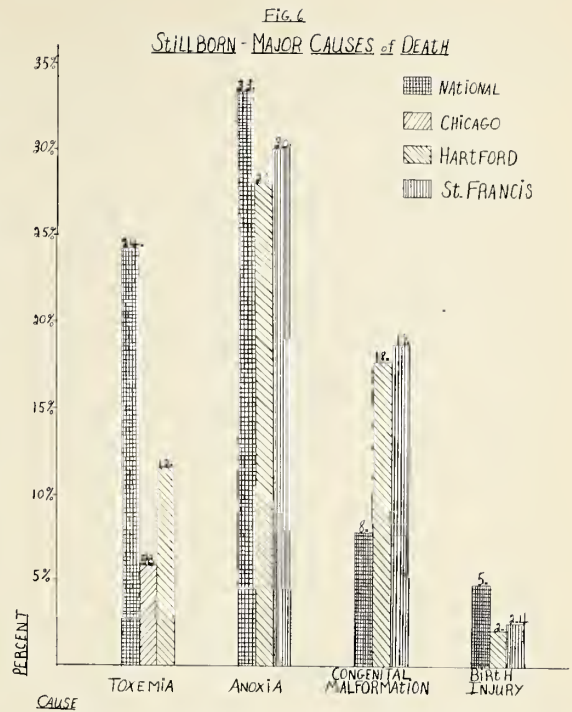
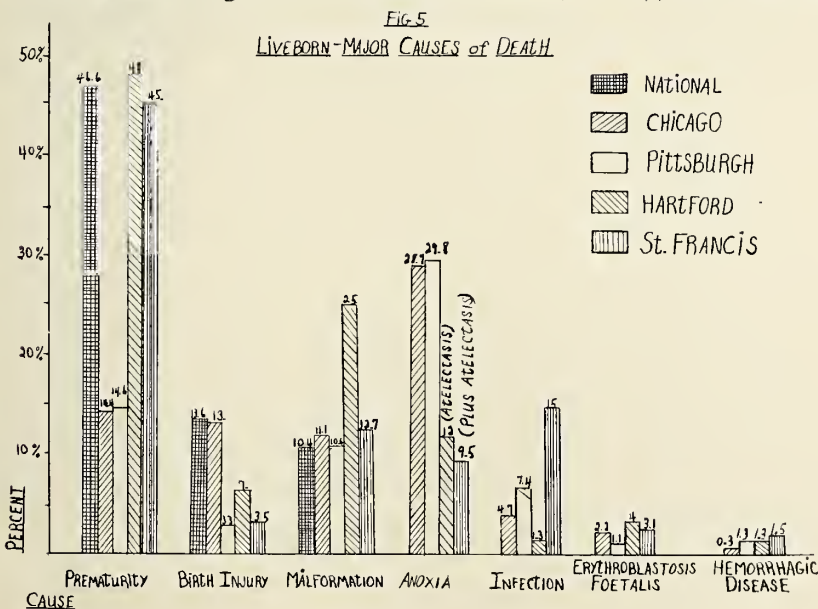
"Hemorrhagic disease" was nowhere defined, held a broad meaning at St. Francis, and was used interchangeably with "hemorrhagic disease of the newborn" but not with "erythroblastosis" by one author.

Further analysis of death causes for liveborn at St. Francis is listed in Table II, after the method of Potter.¹⁰ It first gives the number of total births and deaths, then the individual causes in order of frequency (1) as based on clinical diagnosis, and (2) as based on corrected diagnosis following autopsy. On the whole, the order of occurrence is the same after autopsy, so that in general the clinical diagnosis was reasonably accurate.

The incidence also coincides with that throughout Kansas for 1945-46, where the major causes under one year of life were prematurity, congenital anomaly, pneumonia and influenza, and birth injury.

Atelectasis seems a weak diagnosis, since it is found so much at autopsy of newborn infants, and can be secondary to any other cause. In our cases, it is associated with anoxic circumstances as a rule.

The causes in Figure 6 are restricted in value,



but do relate leading findings. They actually indicate how inadequate present knowledge of stillbirths is, and that high mortality rates (35/1000 in 1940 nationally^{1D}) go hand-in-hand with the inadequacy. Anoxia here includes cases associated with maternal hemorrhage and difficult labor or delivery.

St. Francis stillborn are tabulated in Table III. Only the cases brought to autopsy are reviewed. Anoxia is usually associated with difficult and/or prolonged second stage. Syphilis, when compared to the national rate of eight per cent,¹¹ is infrequent. Maceration is more responsible than at Chicago (11.9 per cent), but it is a finding that often may result from toxemia, anoxia, etc. Toxemia was not charted as a diagnosis.

Summary

1. A study of mortality rates and causes of infant death (over a five-year period) in a private hospital is presented.

2. The report includes over 10,000 births and 470 deaths, giving a mortality rate of 2.48 per cent for liveborn and 2.0 per cent for stillborn.

3. Comparison is made with similar studies from the Chicago Lying-In, University of Pittsburgh, and Hartford Hospitals and from

national figures. In general, results paralleled those from the other hospitals, and were significantly better in all hospitals than nationally.

4. Autopsy was performed in 43 per cent of all deaths, and tended to support the clinical diagnosis for liveborn causes of death.

5. Major causes of neo-natal death were prematurity, infection, and congenital malformations for liveborn, and anoxia for stillborn.

6. Indication is made of the need for more reliable mortality reporting, standardized terminology, and more complete autopsy confirmation.

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CONFERENCE OF COUNTY SOCIETY OFFICERS

Attend the second annual conference of county society officers, Broadview Hotel, Wichita, Kansas, Sunday, October 2. All members of the Kansas Medical Society are invited to be present.

Diagnosis of Vaginal Bleeding *

Howard C. Clark, M.D.

Wichita, Kansas

Abnormal vaginal bleeding was the chief complaint of 200 white private gynecological patients considered in this review. Many of the lesions were malignant and an accurate pathological diagnosis was essential so that proper treatment could be instituted early. Since there has been little advancement in the cure of cancer, an early diagnosis is our only hope.

Irregular bleeding may occur at any time from puberty to old age. Its presence indicates a lesion somewhere in the generative organs. Its causes are exceedingly varied and should be investigated thoroughly so that a definite diagnosis can be made and treatment started early for the best interest of our patients. Too many women pass off abnormal vaginal bleeding as a manifestation of "change of life" and they do not consult their physician for a considerable time after they have observed the bleeding. Too many physicians when consulted arrive at the diagnosis of functional bleeding of the menopause and observe these patients too long. Since this lesion is a malignant one in over 50 per cent of the cases in some clinics, many deaths might have been avoided had the patient been more prompt in visiting her physician. The laity needs to be educated and we can also say this about the medical profession. Many physicians do not examine the patient because they are somewhat confused about the symptoms of cancer and do not know an early carcinoma when they see one. Several years ago, it was customary to "watch" a tumor before recommending treatment and frequently these tumors grew beyond curable stage.

Dr. Charles Galloway¹ advocates a serious educational campaign for the women and this is being done by the American Cancer Society, which urges women to have early and regular examinations by a competent physician. The main reason women do not seek a diagnosis of their complaints is because of modesty and they hide their symptoms much longer than they should.

When the patient comes to the physician either for a routine examination or for specific symptoms of abnormal menstruation, a meticulous history and a detailed medical examination are essential. What the patient considers vaginal bleeding may not be from the vagina but from the urethra or from a hemorrhoidal fissure. Record the number of days that she menstruates and the interval between pe-

riods in order to establish a normal. A woman may menstruate only three times a year and yet be healthy and able to conceive while her neighbor may have a 21 day cycle that is normal. In the child bearing period, in order to rule out pregnancy and its complications, record the date and character of the last menstrual period. If pregnancy is questionable, a rabbit or frog test is indicated. This abnormal bleeding may be due to a systemic disease such as leukemia, hypertension or an endocrine disorder.

After the history is recorded, a complete physical and pelvic examination is necessary to establish a definite diagnosis. The bladder and rectum should always be emptied. Cooperation of the patient by complete relaxation is important. This examination should include inspection of the perineum, the urethral meatus, the vaginal introitus and bimanual palpation of the cervix, uterus and adnexa. Next the vagina and cervix should be examined by speculum with direct visualization of the mucous membrane. This is most important because the cervix is one of the most frequent sites of pathological changes. Papanicolaou smears and biopsy should be taken of suspicious tissue. If there is any doubt about the character of the contents of the uterus, a diagnostic curettage should be done and the tissue checked by a competent pathologist. Here is where the gynecologist and pathologist must work together. Many times it is necessary to cure your patient's clinical symptoms in spite of the pathologist's report on the tissue removed.

A routine rectal examination is a good practice. It occasionally reveals an ovarian tumor in the cul-de-sac not felt in the vagina or a malignancy of the rectum.

In this study of 200 patients, 14 different lesions were found to be the cause of bleeding. Hyperplasia of the endometrium occurred in 61 cases or 35 per cent. The uterus was apparently normal in size. Hyperplasia of the endometrium may occur at any time during the reproductive period or after the menopause. It is probably due to an excessive estrogenic substance producing growth of the endometrium. The diagnosis of hyperplastic endometrium is made chiefly from microscopic examination of the tissue removed at curettage.² In some cases of functional bleeding that do not respond to medical therapy, a hysterectomy is indicated. When these uteri are examined by the pathologist, they appear normal and the histologic picture does not explain why the endometrium leaks blood continuously. The

*Read before the Mid-Winter Clinical Conference, Wichita, Kansas, February 19, 1949.

same pathological situation prevails in the menopausal group when it is considered best to remove the uterus rather than use x-ray or radium. It has been proven that a patient that has had x-ray and radium therapy for functional bleeding is more apt to have carcinoma of the uterus in later life than the patient that has not had previous irradiation. Therefore, maybe a hysterectomy is preferable to having our patients develop carcinoma later in life.

Fibromyoma of the uterus occurred in 55 cases or 27.5 per cent. Usually there was more than one fibroid present in the uterus. The submucous type were prone to produce profuse and heavy flow. Necrosis and infection of the fibroid occurred in five cases giving symptoms similar to abortion. In these cases, biological tests of pregnancy were of value. After the menopause, intramural fibroids have a tendency to work their way to the uterine cavity and cause bleeding. Frequently, other minor conditions are associated with the uterine tumors such as salpingitis and ovarian cysts.

Carcinoma of the genital tract ranked third in the series with a total of 16 cases or eight per cent. Ten cases were adenocarcinoma of the fundus and six cases were carcinoma of the cervix. These statistics are quite the opposite of most medical centers treating carcinoma, which are the melting pot of all advanced cases. My practice is obstetrics and gynecology and I feel that I treat a younger group of patients which accounts for my statistics. Most statistics report that carcinoma of the cervix occurs in about 65 per cent of all cases of carcinoma of the female generative tract. Early preinvasive lesions are asymptomatic. The principal, and commonly the only symptom of invasion, is spotting or bleeding. As the disease progresses, there is profound bleeding at times because of the extreme vascular reaction to the indurated and friable growth. Carcinoma of the fundus of the uterus constitutes about 15 per cent of the malignant lesions of the female generative organs. The majority of the cases develop after the menopause. The bleeding is not severe but becomes continuous as the disease progresses. The diagnosis is made by the Papanicolaou smear and biopsy of tissue removed at curettage.

Endometriosis³ or adenomyosis caused bleeding in 13 cases or 6.5 per cent. It is one of the chief causes of vaginal bleeding in women past 35 years of age. Clinically, the disease resembles cancer. Cytologically it is benign but in certain cases there is a speedy growth of the disease and an invasion into the pelvic organs. It is characterized by dysmenorrhea, menorrhagia and metrorrhagia. As the patient grows older, these symptoms become more severe.

Ovarian tumors were the cause of abnormal bleeding in 14 cases or seven per cent. In a study of ovarian tumors occurring after the menopause,

approximately one-fourth of them were associated with uterine bleeding. Often this bleeding was the first symptom that caused the patient to see a physician. In two cases, the bleeding was caused by invasion from the primary carcinoma of the ovary to the body of the uterus. The onset is silent and early development of ovarian cysts generally occurs without symptoms. The diagnosis in the early stages is usually made by finding a tumor during vaginal examination. This is one condition where thorough and regular examination is of value to the patient. Unfortunately in most patients with ovarian cancer, abdominal enlargement due to the tumor or accompanying ascites common in advanced cases, is the first evidence suggesting ovarian neoplasm. Diagnosis is made on the basis of histologic analysis of tumor tissue taken at operation or, in advanced cases, on the basis of biopsy of material from the posterior cul-de-sac or at exploratory laparotomy.

In some ovarian tumors there is a hormonal disturbance. An example is the granulosa cell tumor which causes uterine bleeding by producing an excess of estrogenic hormone. Granulosa cell tumors may occur at any age but are most common during reproductive life. These tumors occur in young girls causing precocious puberty. Some of these tumors are slow growing and benign but most of them become malignant and should be treated as malignant growths.

Pelvic inflammatory disease occurred in 16 cases or eight per cent. This condition is a fairly frequent cause of abnormal uterine bleeding in young women. It is seldom found in women past the menopause and is becoming less frequent since sulfa compounds and penicillin.

Prolapse of the urethra, caruncles and cervical polyps cause considerable trouble in women over fifty years of age. The symptoms are bleeding after intercourse or douches. There were several erosions and ulcerations of the cervix that had to be biopsied because of their suspicious nature. One case had been wearing a pessary for 15 years and had a large ulcerated lesion. Cervical lacerations and ulcerations undoubtedly predispose to carcinoma and should be carefully checked in order to rule out pathological changes.

Incidence of various lesions responsible for Vaginal Bleeding in 200 cases

No. Cases		No. Cases	
1. Endometrial hyperplasia	61	8. Cervical polyps	7
2. Fibroids	55	9. Carcinoma of Cervix	6
3. Pelvic inflammation	16	10. Sarcoma of Endometrium	3
4. Ovarian	14	11. Urethral caruncle	1
5. Endometriosis	13	12. Vaginal ulceration from pessary	1
6. Cervical ulceration due to prolapse	11	13. Bicornate Uterus	1
7. Carcinoma of Body of Uterus	10	14. Ulceration of Cervix	1

Discussion

Treatment has been omitted in this article, for it was my purpose to stress the necessity of a patholog-

ical diagnosis in order to institute proper therapy in the malignant cases. As shown in most of the cases, bimanual and speculum examination will diagnose the causative factor. In the other cases, a diagnostic curettage and Papanicolaou smear will be necessary. In cases that continue to bleed following careful examination, it is necessary to perform a laparotomy to find ovarian malignancy or beginning fundus adenocarcinoma which was overlooked by the curettage and Papanicolaou smear.

One must condemn the practice of the treatment of atypical bleeding from the uterus without diagnosis of the cause. If careful examination of the pelvis gives negative results, a period of observa-

tion may be permitted. It is poor medical practice to give a woman "shots" for menstrual irregularities when she has reached the age of menopause unless cancer has been ruled out.

In some clinics, statistics prove 50 per cent of these lesions are malignant after 35 years of age. Therefore it behooves every physician treating female patients to consider vaginal bleeding serious until proven otherwise.

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ROSTER TO BE PUBLISHED

In response to many requests for a list of members, the Kansas Medical Society is now preparing a roster of its membership, to be published in pamphlet form. Members of the Society will be listed in two ways, alphabetically and by cities. A copy of the roster will be mailed to all members of the Society within the next month.

Chylous Cyst of the Mesentery

J. Allen Howell, M.D.

Wellington, Kansas

The purpose of this paper is to review some of the pertinent facts regarding the surgical problem of chylous cyst of the mesentery and to report a recent case.

The rarity of this condition makes it almost a surgical curiosity. Roller¹ estimated that mesenteric cyst was found in less than one in 100,000 abdominal operations. Judd and Heimdal² reported that the Mayo Clinic had eight cases of mesenteric cysts in 820,000 admissions. In 1941 Loeb³ estimated that from 550 to 600 cases had been reported in the literature since a mesenteric cyst was first observed at autopsy and described by Benivieni in 1507.

According to Lahey and Eckerson⁴ lymphatic or chylous cysts of the mesentery arise from developmental or obstructive phenomena of the mesenteric lymphatic system.

These cysts occur between the layers of the mesentery. They are most frequently found in the mesentery of the jejunum. They are lined by endothelium or often by merely fibrous tissue. The fluid contained in these cysts is chyle and this fluid gives the cyst its greyish color. Hemorrhage into the cyst may alter its color even to the point of making the cyst black.

It is unlikely that a primary preoperative diagnosis of chylous cyst of the mesentery will be made, but it should be considered at times in a differential diagnosis.

Pain in the abdomen is the most striking symptom. One of the main characteristics of the pain from mesenteric cysts is its failure to localize. The pain is described as being all over the abdomen. Nausea and vomiting and anorexia are often striking symptoms. Actual bowel function is usually not disturbed. These cases have no fever or increased pulse rate. Hemorrhage into the cyst or rupture of the cyst may produce abdominal tenderness and even rigidity.

A chylous cyst is often only partially filled with fluid and this condition may make it impossible to palpate any definite tumor mass. Acute symptoms with the cyst may cloud the diagnostic picture.

Abdominal conditions much more frequently encountered and often suspected when the acute symptoms of mesenteric cyst present themselves are: acute appendicitis, intestinal obstruction, acute diverticulitis and also other types of abdominal tumors.

In the surgical treatment of chylous cyst of the

mesentery, Warfield⁵ emphasizes the fact that each case presents its own individual problems. He summarizes the treatment as follows:

1. Enucleation is the treatment of choice.
2. Enucleation with a resection of a segment of bowel may be required because of interference with the blood supply to the bowel.
3. Marsupialization may offer the safest surgical treatment.

Case Report

This case of chylous cyst of the mesentery occurred in a little white boy, D. K., three years and eight months of age. He was admitted to the hospital December 6, 1948, and discharged December 12, 1948.

Working Diagnosis: Partial intestinal obstruction, recurrent. Cause unknown.

Final Diagnosis: Chylous cyst of the mesentery.

Chief Complaint: Generalized abdominal pain, nausea and vomiting.

Past History: One year ago this child had his first attack of sudden abdominal pain with vomiting. At that time the pain lasted only a few minutes and stopped as suddenly as it had started. During the past year this child had had numerous attacks of abdominal pain, but this pain always lasted only a few minutes and was not severe. As soon as the pain would stop the child would seem perfectly well and would run and play in a normal way. On December 2, 1948, he had his most severe attack. At that time he cried intermittently with pain for five hours. He was relieved after vomiting. This attack made surgical intervention mandatory.

Physical Examination: There was a moderate fullness to the abdomen but no distinct mass could be felt. There was moderate tenderness in the region of the navel. Slight voluntary muscle spasm was present but there was no rigidity. All other physical findings were normal. Blood count was within normal limits. Urinalysis was negative.

Operation: Mesenteric cyst removed, appendectomy.

Gross Findings: There was a mesenteric cyst the size of a very large orange located in the mesentery of the jejunum. The cyst sac was only about three-fourths filled with fluid. The cyst was bluish-black in color and the cyst wall was fairly thin. The base of the cyst extended up to the very margin of the small bowel. The cyst was not adherent to any other structures.

Pathological Report

Specimen: Cyst from mesentery.

Gross Appearance: Specimen consisted of an irregular shaped piece of wrinkled whitish tissue measuring 4x3x0.5 cm. It appeared to be a previously opened thin wall cyst. The wall was one mm. thick, translucent, with prominent vessels on the surface. The inner surface was smooth and there were no papillations seen. Representative section was taken.

Microscopic Findings: The cyst lining was composed of a single layer of flattened endothelial cells beneath which was a small amount of fibrous connective tissue. Throughout the adjacent tissue there were focal infiltrations with lymphocytes, mononuclear cells and occasional plasma cells. There were numerous vascular channels which were dilated and filled with red blood cells.

Pathological Diagnosis: Chylous cyst of the mesentery.

Discussion

This was a true mesenteric cyst. An exact preoperative diagnosis was not made. Abdominal disease producing symptoms of recurrent partial obstruction demanded surgical exploration and treatment.

Preoperative x-ray studies of the gastro-intestinal tract and the genito-urinary tract were deemed inadvisable in a patient so young.

It was possible to resect the cyst from the mesentery without too much interference with the blood supply to the bowel.

Summary

A chylous cyst of the mesentery in a child three years and eight months of age is reported with operative removal and uneventful recovery.

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TO PLAN PUBLIC RELATIONS PROGRAM

Plans for a Kansas Medical Society program of public relations will be made at a conference of county society officers to be held at Wichita, Sunday, October 2. You are invited to attend.

CHILD WELFARE PAGE

The Mentally Retarded Child

Importance

There are a great many of these children. They are handicapped in a very real sense of the word. They and their parents are as much deserving of aid as if they were lame or blind or deaf.

Classification

Generally made on a basis of the I.Q., which is often difficult to determine accurately.

Dull normal to low average	I.Q.	80-95	Imbecile	I.Q.	25-50
Borderline deficiency		70-80	Idiot		Below 25
Moron		50-70			

Recognition

Definite types with major retardation, such as Mongols and microcephalic idiots, are fairly easy to recognize. Lesser degrees of deficiency may present much difficulty. A good history is most important; it will often show *progressively increasing* lag in mental and physical development. Observation of the child at play may show bizarre behavior, clumsy muscular control, short attention span, an impoverished imagination.

It should be remembered that a moderate deficiency may present itself as a behavior disorder or a severe emotional disturbance (to which these children are extremely susceptible), in the same way that primary psychiatric disorders sometimes mimic mental deficiency by a lowering of the I.Q. and failure to progress normally in school.

As with any other handicap to which a child is heir, the sooner it is recognized, the better for all concerned, as remedial measures may be undertaken immediately.

Disposition

In general, the most severe grades of retardation should be institutionalized as soon as possible, especially if there are other, normal, children in the family. If such a child stays at home for any length of time, its parents may not be able to face giving it up.

The chance of a reasonably happy and independent existence increases from I.Q. 50 on up. To this end, emotional stability and good character traits are about as important as the intellectual capacity, and these are achieved better in a good home than in an institution. Special schooling will be necessary however. Disposition must be based on an evaluation of *all* the factors, familial, medical, and social.

Borderline defectives must usually remain at home, as the state provides custodial care only. Unless these children receive good instruction and supervision, they will swell the ranks of the juvenile delinquents and other social failures.

Facilities Available

Expert diagnostic and counselling facilities are available at the Southard School in Topeka, The Wichita Guidance Clinic, the Receiving Home at Atchison, and the Medical Center. The Wichita school system provides special classes for (moderately) retarded children.

* * * * *

The parents of these children must be given every consideration. If their child has to be institutionalized, the physician must help them to this decision, and alleviate their feelings of guilt and despair. If the child is to remain at home, it is the physician's responsibility to see that they get the best advice available, and continued help in planning for the future.

CANCER PAGE

Carcinoma of the Vulva

Carcinoma of the vulva is one condition which will become of greater significance as the life expectancy increases inasmuch as it occurs most frequently in the sixth or seventh decade. Histologically it is, of course, a skin cancer but its malignant potentiality is great because of the rich lymphatic drainage in this area. The lesion is usually found on one or another of the labia or close to the clitoris. This form of cancer ranks fourth in frequency of malignant conditions of the female genital tract, cervical, fundal and ovarian carcinoma being more frequent.

The generally unsatisfactory results in treatment in the past can be traced particularly to the reluctance of patients of this age group to present themselves for examination, and, in considerable degree, to inadequate treatment. The former factor is being reduced by the various educational campaigns. The latter is likewise being improved not only along educational lines but by more effective surgical techniques.

Not infrequently the histories given by patients with carcinoma of the vulva follow the same pattern. The patient tells of noticing a small area of irritation on the vulva which she either ignored or "treated" herself. If she presented herself to the physician for treatment, she was, all too often, given a palliative agent which she used for an indefinite time. Usually such palliation reduced the irritation temporarily, then the lesion became obvious and the situation was frequently out of control. As with carcinoma elsewhere, to make the diagnosis, vulvar carcinoma must be thought of, and the biopsy will eliminate doubt.

Adequate surgery is now considered to be the treatment of choice for this condition. By adequate surgery is meant not only excision of the vulva but attention to routes of the lymphatic spread. This will involve, in most cases, a radical excision of the superficial and deep inguinal nodes and particular attention to the obturator nodes. Many patients in this age group do not tolerate the extensive surgery well but the advancements in pre-operative and post-operative support have increased the number of patients to whom surgery can be offered.

Leukoplakia warrants some consideration in the discussion of carcinoma of the vulva since the cancer is preceded in approximately half of the cases by a leukoplakia. In spite of the discouraging frequency of recurrence of leukoplakia in previously normal appearing tissue it would seem that surgical excision of such areas is certainly warranted as a prophylactic measure.

PRESIDENT'S PAGE

Dear Doctor:

According to a recent bulletin from our state health department in Kansas, the maternal mortality rate for the first six months of this year has been lowered from 0.8 per thousand births to 0.6 per thousand live births. One would be justified in assuming that a like improvement has taken place in all medical care in Kansas. I am very happy indeed and feel much honored to work with a group of doctors doing their work so efficiently.

During the last 30 years scientific medicine has advanced far beyond any reasonable expectation. We have new drugs, new biologicals and improved surgical technics which have given magical results compared to the accomplishments of 30 years ago.

The first six months of 1948 there were 18 suicides in Kansas as compared to 29 over the same period this year. It is quite possible that we are taking care of diseases much better than we are taking care of the patients. It seems to me that each doctor, regardless of his specialty, should be equipped to take care of the minor frustrations of his patients. It is of very little value to the patient to perform a brilliant operation, then in the course of a few years have the patient become a permanent member of one of our institutions for the mentally ill. It is only natural that this situation should exist. Mrs. Jones often describes in glowing terms the wonderful manner in which her large tumor was removed by her doctor, but Mrs. Smith will have nothing to say about the doctor who relieved her of her major mental disarrangement.

Our state legislators appropriated very liberally during the last session of that body, to give us better trained men and better equipment to take care of our mentally ill. Let us hope that each of us may take more time to correct the minor mental ills of our sick people. The best cure for a grave illness is to not let it happen. Possibly our program committee for next year may well find room for a guest speaker in psychiatry.

President Truman's reorganization plan was defeated. Kansas, through her legislators and doctors, contributed to the defeat of this plan, which would have been a step toward socialization of medicine. We will have more and more plans of this type to be opposed. To defend our rights, we have a few plans of our own to present to you at the October meeting in Wichita. I hope there may be a full representation from each county society at this meeting. American medicine must not fail the American people by allowing regimentation of the American doctor.

Sincerely,

Haddon Peck, M.D.

EDITORIAL COMMENT

An Open Letter to Mr. Bevin

Mr. Aneurin Bevin, you may recall a conversation you had with John W. McPherrin, editor of the *American Druggist*, in your London office. In the July, 1949, issue of that journal, he quotes the following of your conversation concerning medicine. Do you wish to read it to make certain the statements are accurate?

"Most people trust their individual doctors. At least they trust them more than they do organized medicine, the associations of doctors. When a doctor becomes a member of an organized group something seems to happen to his thinking. Did you ever notice that? It is quite a phenomenon.

"The mental change that comes over a doctor when he functions as a member of organized medicine is unbelievable. It ought to be the subject of psychological research. You know that organized medicine has always been arrogant, always on the defensive. What are these doctors afraid of? Maybe they have an inferiority complex of some kind. It is all very surprising because, as individuals, doctors most of them, enjoy the faith and confidence of the public."

Group thinking should not be so "very surprising" to you, Mr. Bevin. Without labor thinking as a group, there might have been some other Minister of Health in Great Britain, or is that too naive to be polite? Furthermore, the administration of socialized medicine requires that a large segment of the population think as a group, and directing that thought is certainly one of your duties. In America we speak of such tactics as propaganda but to the Minister of Health of Britain's labor party we suspect it would not sound discreet.

Anyway, it seems strange that group thinking should contain any mysteries for you. Could it be that a group of doctors think differently from other groups and that it is the doctor himself you do not understand? You have seen him, perhaps, only as a professional man caring for the illness of an individual patient. Then you think he is quite all right.

You might say we lack knowledge of the British Medical Association, and you are right. We do, however, have some insight into the American Medical Association and the Kansas Medical Society. We know that our doctors would react to your program about as yours did (perhaps even a little more vehemently because we think of our government as a servant of the people. It is our nation—we own it, if you please—but that is wandering from the subject). In fact, we have elements

within our government who agree with you about the group thinking of doctors, so perhaps, we are not too dissimilar. May I tell you, Mr. Minister, what group thinking does to the Kansas doctor?

It teaches him the advancements of medical science. He meets and visits with the members of his profession. He listens to them lecture and goes back to give the minister of health or the chore lady the newer, better care he has learned. Now, you see him upon his return only in his office and do not know that he perfected that bit of surgery or learned the use of aureomycin while he was away. You like what he did for you because you return to your duties, recovered, but without an organization to help him, his graduate education would be retarded.

Yes, I suppose a government could give this to him, but here he plans the meeting, produces and finances it in the way he selects. And he attends because he wants to. In a government-operated program there would be a strong temptation, in the United States, at least, to give him what the government wishes him to have. And that would be an effort to control his group thinking, to alter it so a layman who occupies the position of minister of health might understand him better. A situation of that kind would certainly make your work easier, Mr. Bevin, but curiously, it would not make the sick get well more rapidly.

You see, preventing and curing disease or injury are the major objectives of a physician's life. He entered that field as an artist because within him there is a compulsion for individual accomplishment. His is creative work within science as surely as the creative exists in literature or music. Once you tell the composer that his music be restricted to prescribed themes, or that a certain style must be followed, the artist loses interest. That art deteriorates until the entire world quickly recognizes the change.

The physician feels the same way. It is an enormous responsibility he faces whenever a patient asks for his help. He does what he believes to be best. He requests help from respected colleagues when necessary, but the matter is his responsibility and, as such, he searches his judgment, his training and his experience to enable him to give forth his best effort. That is a creative activity which does not lend itself well to domination.

The Kansas Medical Society tries to inspire its members and much of the conversation is on that general topic. The society does more, however. As a group also, we are pledged to give the public the best medical care that can be given. This means the

endorsement of and active participation in sound public health programs, sanitation, hospital construction, medical education, the allied groups, and legislative affairs, for example. We try to recommend whatever we think as a group would be best for the health of the people, and group thinking incidentally, represents the majority opinion of the members present, as I suspect it does in the British Medical Association.

Now, that should not be so "unbelievable" except to someone who has not been accustomed to abiding by majority opinion, but surely you learned that in public office if not before. So the only remaining mystery is why should group thinking concern itself with benefits for those not in the group.

If that is any problem at all, Mr. Bevin, then it is admittedly hard to explain. Doctors whose whole professional activity centers around service for others just continue to think that way as a group. The Kansas Medical Society will oppose a system of socialized medicine for the same reasons, I am sure, that the British association dislikes your plan, because they know it is not best for the people and for the nation. It is economically unsound, we believe, and destroys freedom and individual initiative. In America, we still place a value on that. Then, last but not by any means least, a system such as yours is not best for the health of the people. We can demonstrate that but this letter is long enough already.

If you find it in your heart to believe that an organization can exist which has public service as its major objective, then surely understanding organized medicine is no more difficult than understanding the motives that direct the activities of your personal physician.

If things are still "unbelievable," then it must be a matter of fundamentals. Like this: we saw in an American newspaper recently that Britain is willing to give up its socialized medicine program if the United States might be induced, thereby, to send to your nation more of its dollars. That kind of organized thinking, Mr. Bevin, would be very hard for a doctor to understand. So maybe it is after all a matter of fundamentals.

Rooming-In for Obstetrics

Favorable accounts of rooming-in projects in obstetrical services, where baby and mother are together, appear with increasing frequency. The most recent is a report of 1,400 such cases from a Philadelphia hospital which was published in the July Pennsylvania Medical Journal.

The authors not only recommend this practice but prophesy that the day will arrive when boards of health require it for all hospital obstetrical services.

They say the rooming-in project prevents epidemic infections, improves mother-baby relationships, stimulates breast feeding, improves baby care and provides training for the mother in the responsibilities and techniques of infant care.

With reference to infections, they claim this can be controlled within the ward and that other babies in the ward are seldom affected while those in other wards are not exposed at all. The bassinet is placed beside the mother's bed and each infant has its own bottles, thermometer, etc., so the chance for infection spreading is greatly reduced.

The mother becomes interested in the baby and quickly provides for its needs. She recovers from her obstetrical experience earlier because she has things to occupy her attention. The baby senses security because it is fed when hungry, thereby escaping the exhaustion of crying perhaps hours before feeding time arrives. These babies sleep more, are quieter and better contented.

After the first day the mother provides 80 to 90 per cent of the baby's care. The only nursing service required is that furnished by the regular floor nurse, and the baby's care is perhaps improved because the mother rings when she believes assistance is needed. This project also enables the nurse to supervise and train the mother in techniques for baby care which, incidentally, gives the mother an incentive for early ambulation and more rapid recovery.

Architectural reconstruction is unnecessary because every private room and ward will adapt itself to this procedure. It can then be universally employed and will, besides those other advantages, permit the father also to visit with his baby instead of being excluded during the period of hospital stay.

There are several questions the authors have not satisfactorily answered. One is how the mother is induced to welcome this procedure. The primipara, perhaps yes, but she is frightened at the prospect of caring for her child and welcomes the opportunity of getting accustomed to it gradually. However, the mother who has had other children enjoys the hospital stay as a vacation from her daily child-caring tasks and might well disdain the suggestion that a young nurse teach her techniques of baby care. Convincing those women that the rooming-in project is an advancement in medical science might prove something of a challenge to the obstetrician.

A more serious doubt exists on the question of epidemic infections. The authors state that no contagious disease has developed among 1,400 ward babies housed at the mothers' bedside. The total is large enough to be significant, but there are probably instances where nursery care covered an equally long period without epidemics. In case of a threatened epidemic this procedure might check its spread,

so it is possibly sound to institute the project before the epidemic threatens, but a question still remains.

Someone took the time to check over the records of 3,700 cases of epidemic diarrhea occurring in hospital nurseries. He found 50 per cent of the cases were caused by contaminated milk, 25 per cent were caused by personnel through the use of thermometers, etc., and 25 per cent were caused by droplet infection from the nose and throat of attendants. If these figures are correct it is difficult to see how the rooming-in project can alter the situation significantly.

The completely breast fed baby will not be susceptible to infection spread by milk, whether housed in a nursery or with its mother. The bottle fed baby will be equally exposed under either circumstance. The other 50 per cent of the infections purported to be caused by attendants will be stopped as readily in the nursery as in the ward through the exercise of greater precaution. What is gained by segregating the babies from each other might well be lost by the fact that many more persons will come in contact with them. You also add the hazard from the outside. In ward rooms, this includes those coming to see all the patients.

The project is of interest. There seems no question but that it provides a psychological benefit both for the mother and the child, and it could be a means for preventing the spread of infection. It should be emphasized, however, that under the rooming-in plan techniques for the care of infants can not be relaxed because new potential dangers are introduced. Routine hospital regulations should probably be made more strict.

Reorganization Plan Defeated

The Senate defeated the President's Reorganization Plan No. 1 by a vote of 60 to 32 on August 18, 1949. It will be recalled that the President notified Congress of his intention to create a cabinet post of welfare to direct those affairs currently under the control of the Federal Security Administrator. It was a back-door thrust to boost socialized medicine inasmuch as Mr. Ewing would be offered this post (according to rumor) and because the President declared this post would be created unless one house of Congress voted to prohibit the action.

This was a case where the executive branch of this government (by the people—for the people, remember?) took over the duties of the legislative department. It was an example of where a measure would be passed unless the Congress prohibited the action. If nothing was done within 60 days, the President's plan would go into effect. Congress had no power to amend or limit the proposition, so they rejected it 60 to 32.

In one way, this may be considered a splendid victory for American medicine because government controlled health was the central issue. It was the first vote on socialized medicine, and the Senate spoke almost two to one in opposition.

But it was not easy. The AMA and the various state societies worked for two months to get this issue clearly defined. Your president, Dr. Peck, attended a meeting in Denver with presidents of 14 western states and immediately afterward spent a week in Washington as did representatives from many other societies.

Kansas' job, fortunately, was not one of convincing its senators of the dangers involved in the President's Reorganization Plan No. 1. Both Senators Reed and Schoepel understood the problem from the beginning and were completely and firmly opposed. They explained their position long in advance of the vote, and never was there any doubt whatsoever about how Kansas would stand. Senator Schoepel was in a particularly strategic position in this regard as a member of the committee where the proposal was first discussed. He was active there and strengthened his reputation for brilliant and intensive questioning of witnesses.

Many demands have been made upon our senators and time after time they have taken special pains to be of assistance. In this instance, particularly was their aid beneficial because a tremendous issue was at stake. An expression of gratitude from the physicians of Kansas would be appreciated by the Kansas senators; a brief letter of thanks would let them know their efforts are being noticed.

This was a victory for the medical profession but only in one sense. In a much larger and more vital way was this a victory for freedom of the American people. The issue was actually only over giving a layman of cabinet rank control over matters of health, education, social security, etc. Popular knowledge of the situation raised the question of whether a man pledged to principles of socialization should have such a position, and on that the Senate balked.

Not because the medical profession was opposed to the plan, but because it would not be to the best interest of the people in this nation. And that, after all, is the position of the medical profession also. We object to socialized medicine not on the grounds of what will happen to the physician, but because of what happens to the nation under such a program, to its people and to their health. No one knows better than the doctor what this means, so he is speaking, wherever he may be heard, to acquaint the public with the problem. His objections are in the interest of public service and it is in that interest that the Senate blocked the President's plan.

So the victory, the real victory, goes to the American people. They gained by this action in retaining

their liberty. The medical profession told the story, honestly, clearly and without selfishness. After hearing both sides, the Senate was convinced and promptly acted to defend the side held by the medical profession. This was an eloquent expression of confidence. It wasn't the first round nor will it be the last—but it was a decisive action and one for which the two senators of Kansas deserve much praise. It would be fine if each member took a few moments to write them.

Home Permanents

Now that 30,000,000 home permanent kits are sold annually to the women of America, the question arises: are they safe? In the July, 1949, Archives of Dermatology and Syphilology a doctor reports that they can cause various kinds of dermatitis to enough women that their use should be restricted.

Other authors have previously reported home cold waves to be safe or at least harmful to less than 0.1 per cent of the users. Active ingredients in most cold wave solutions include thioglycolic acid, ammonia, perfume and coloring matter, the same ingredients that are used by the professional beauty operator only in smaller percentages.

In combing the literature instances may be found where home permanents have been credited with causing dermatitis, hepatic damage and toxic reactions. Most commonly the trouble arises from an allergic reaction with the main impact on the skin and mucous membranes. Most vulnerable are persons with anemia and allergic disturbances on whom the effect is cumulative so that each subsequent exposure may be more severe than the previous experience. The effect may appear as a rash on the scalp and fingers, as an exudative, eczematoid eruption, in patches of pigmentation and in various other ways.

The author states that the product is dangerous, the instructions are complicated and that allergic persons or those suffering from chronic dermatitis should not use the home permanent wave kits. If they feel that curly hair is essential the safest procedure would be the machine permanent wave, next a cold wave given by a competent operator. The home method of self administration is the most dangerous of the three.

Medical Assistants to Meet

The annual fall clinic of the Kansas Medical Assistants' Society will be held at Lawrence on Sunday, October 23, with social events on Saturday evening for those who arrive on that date.

Conference of County Society Officers

The second annual fall conference of county medical society officers will be held in Wichita at the Broadview Hotel on Sunday, October 2, at 8:30 a.m. This is being presented as a public relations meeting and could well become one of the most significant events in the history of the Kansas Medical Society.

Present will be representatives of the radio and press who will advise the medical profession of effective public relations procedures as seen from their points of view. Whitaker and Baxter, the directors of the A.M.A. educational campaign, will be in Wichita to speak before the group on that occasion. The Kansas Medical Society will consider at that time methods along which a public relations program may be inaugurated that will gear the activities of the county societies, the state society and the A.M.A. in Kansas into a coordinated effort.

This meeting is significant enough that Dr. Peck, president, is calling a special session of the House of Delegates to meet with the county medical society officers. Also present will be the officers and councilors of the Kansas Medical Society and about 50 members of the Woman's Auxiliary. It will be an all-day session closing at 5:00 p.m. The society hopes that each component society will be represented and wishes to extend an invitation to attend to any member of the society who is interested. The complete program may be obtained from the secretary of each county society.

Research on Rheumatic Diseases

Appointment of an advisory group of nationally known physicians as the first step in a nation wide research program to combat rheumatic diseases was announced last month by the Federal Security Agency. The group will be headed by Dr. Phillip Hench of the Mayo Clinic.

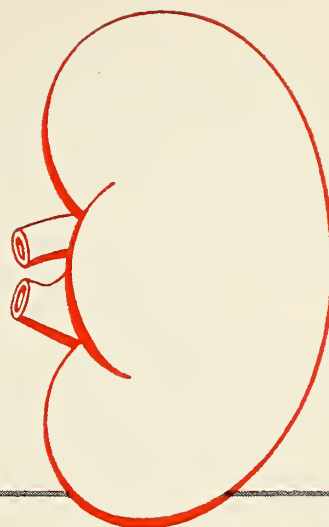
One of the functions of the study section will be to explore the recently discovered possibilities of two substances, cortisone, popularly known as Compound E, and ACTH. Both have shown remarkable, though temporary, power to alleviate symptoms of patients suffering from rheumatoid arthritis.

The study section will advise the Public Health Service on development of a program to combat rheumatic diseases and on grants of federal funds to aid research in hospitals and medical schools and other non-federal institutions.

In addition to research in treatment, investigation will also be directed toward discovery of the basic causes of various forms of rheumatism and allied conditions, and determining the precise method of action of the new compounds and their subsidiary effects on the human body.

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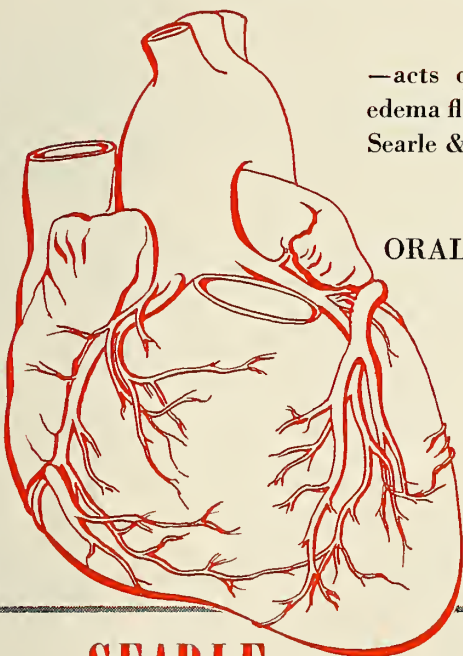
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SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

1. Brown, W. E., and Bradbury, J. T.: The Effectiveness of Various Diuretic Agents in Causing Sodium Excretion in Pregnant Women, *Am. J. Obst. & Gynec.* 56:1 (July) 1948.

SOCIALIZED MEDICINE

Editor's Note. This is the third of a series of articles dealing with federal compulsory health insurance. These are designed to give the physician factual information and reliable data which may be used in the preparation of articles or speeches on this important subject. Additional material will be presented in subsequent issues.

Unnecessary Deaths

On January 30, 1948, the president wrote the administrator of the Federal Security Agency, requesting him "to undertake a comprehensive study of the possibilities for raising health levels and to report to me, at your early convenience, upon feasible goals which might be realized by the American people in the next decade." Mr. Ewing replied on September 2, 1948, with a printed book of 186 pages entitled "The Nation's Health—a Ten-Year Program." This is known as the Ewing report and has become a bible to many of the proponents of socialized medicine.

Mr. Ewing's own position on this subject is well known to the medical profession, but here on Page 114 of the report are his own words: "The compelling argument, however, that drives me to an advocacy of national health insurance is that I see no other possible way of bringing adequate medical service to fully half of the American people. It would, obviously, be nice if we could find some other way that would arouse less opposition from many members of the medical profession. But I see none. And seeing none, I am not willing to abandon my advocacy of a program that I believe will bring more adequate medical services to fully 70,000,000 people just because some members of the medical profession prefer to maintain the status quo. It seems to me impossible to argue fairly for the status quo in the face of the fact that there are more than 300,000 deaths each year that we have the knowledge and skills to prevent.

"I, therefore, recommend that the President continue to urge upon the Congress the earliest possible enactment of government health insurance in some such terms as outlined in this report."

Much is made of the 300,000 unnecessary deaths. On Page 1 is the statement, "Every year, 325,000 people die whom we have the knowledge and the skills to save." These are broken down elsewhere in the report.

"For example, out of the 170,000 deaths from communicable diseases, including pneumonia, that occur every year, we should be able to save at least 120,000 with the knowledge and skill that we now have.

"Of more than 600,000 deaths from cancer and heart disease each year, we should be able to prevent 115,000.

"Similarly, of the 100,000 deaths yearly from accidents, the fuller use of safety measures and better education should permit us to save perhaps 40,000.

"Infant and maternal deaths have been reduced sharply during the last two decades, but we have fairly conclusive evidence that at least another 30,000 of the 110,000 who now die yearly could be saved. This is in addition to the 5,000 deaths from communicable diseases and 12,000 deaths from pneumonia among infants under a year—included in the estimate on communicable diseases above—that could be prevented.

"Finally, we could probably save in the neighborhood of 20,000 lives from the remaining group of several hundred diseases which claim 400,000 lives a year.

"These are some of the lives we could save if we were able today to assure every person in the country that he would be able to receive the health and medical services that he needs. All told, these preventable deaths total 325,000."

Numerous other sections could be quoted as on Page 153—"162,000 people under 20 now die each year, although we have the knowledge and the skills to save the lives of nearly half of these.

"Every 19 minutes an infant dies whose life could have been saved.








"Every four hours we lose a mother in child-bearing whom we might have saved."

There is only a hint of how these figures were obtained. Mr. Ewing says if every state had done as well as Minnesota in 1945, nearly 2,000 mothers would have been saved; if all had equalled Rhode Island's record, 28,000 babies would have been saved in that year. And both of these states could improve their statistics, Minnesota by 75 per cent, he suggests. The implication is that these reductions in unnecessary deaths could be achieved if there were more doctors and if 80 per cent of our population did not find it impossible to pay for medical care.

A great many things might be said about these figures but the following suggestions will be sufficient to call other arguments to mind. Most of these were taken from an analysis of the Ewing report by Frank G. Dickinson, Ph.D., director of the Bureau of Medical Economic Research, American Medical Association.

If 325,000 of the 1,400,000 deaths were prevented, it would make the total deaths less than they have been in any year during the twentieth century, even when the population was only half its present figure.

In fact, the figures are meaningless because no

1. HIGH IN PROTEIN—19%—as a result, a single ounce of Cerevim  provides 5½ grams of protein—plus:
2. THIAMINE—0.6 mg. per ounce of Cerevim  "The cumulative effects throughout lifetime... (of thiamine)... may spell the difference between alert, successful living and a marginal effectiveness."¹—plus:
3. NIACINAMIDE—6.0 mg. per ounce of Cerevim  in accord with The National Research Council's recommended allowance²—since "Nicotinic acid is found in natural foods only in limited amounts."³—plus:
4. RIBOFLAVIN—0.9 mg. per ounce of Cerevim  for this factor is directly related to growth⁴ and is "essential to the defense powers of the organism"⁵—plus:
5. CALCIUM—300 mg. per ounce of Cerevim  thus supplying 8 times the calcium in a fluid ounce of milk—plus:
6. IRON—7.5 mg. per ounce of Cerevim  since "a child's increasing need for iron cannot safely be left to chance."⁶—plus:
7. COPPER—0.3 mg. per ounce of Cerevim  in the 1:25 ratio which Elvehjem, et al.⁷ and Cason⁸ found particularly effective in raising hemoglobin levels in infancy.


With such natural foods of high biologic value as:


8. WHOLE WHEAT MEAL 9. OATMEAL 10. CORN MEAL 11. NON-FAT MILK SOLIDS 12. BARLEY
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Leading to such benefits as the literature⁹ reports:

16. "increase in urinary output of riboflavin" 17. "improvement in pediatricians' scores" 18. "improvement in skeletal maturity" 19. "improvement in skeletal mineralization" 20. "retardation of increase in dental caries" 21. "recession of corneal vascularization" 22. "improvement in the condition of the gums"

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24. PALATABILITY—Cerevim  makes all the above acceptable as well as available to infants and children.

in all—24 good reasons
why CEREVIM  is
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a pre-cooked cereal for professional specification now
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attempt is made to break these down into age groups. Every man must die eventually and the true measure of medical progress is not statistics on how many died but on how long they lived before they died. In 1900, life expectancy at birth was 49 years; in 1930 it was 59.5; in 1940 it was 63.8 and for 1949 it may reach 68 years.

Along with that, the actual death totals have increased, but a greater proportion of the deaths are old people and one cause of death is primarily cancer and heart disease. The increased death rate from these causes is actually a measure of medical progress. The people who die young do not die from those causes. Looking at it another way, the span of life has not increased. In ancient Rome and Athens, some people lived to old age. Our health progress is manifested by the high percentage of our people who die at older ages.

Actually, persons of all ages are reaping the benefit of scientific advancement in medicine. In 1900, the crude death rate in the nation was 17.2 per thousand population, counting all persons at all ages. By 1945, this had dropped to 10.6 and the gain is indicated in all age groups. As an illustration, in 1900 the death rate for children under one year was 162.4 per thousand; in 1945 that was 41.4. The figures for children from one to four dropped from 19.8 down to 2.0; for persons 85 years of age and over, it dropped from 260.9 to 228.9, etc. Therefore, the number of deaths will continue to increase. The only significance that can be attached to such figures concerns the age at which they die and this is not touched upon in the Ewing report.

Along other lines, it has often been shown that Sweden leads the world in maternal mortality. Recent figures are not available, but the United States' rate in 1947 was barely one-third Sweden's rate in 1933. By now we have probably passed that. Moreover, the United States includes its nonwhite population in its statistics while many other nations do not. New Zealand has a carefully selected population, consisting almost entirely of British emigrants, but Minnesota, with a larger population than New Zealand, will have a better rate. Apparently Swedes live longer in Minnesota than they do in Sweden and Norwegians live longer in South Dakota, where there are 10 counties without a physician, than they do in Norway.

Perhaps figures like these would be more indicative of the situation:

1. Four of a dozen funerals in 1900 were for persons who had lived at least 50 years. Nine of a dozen funerals in 1949 were for persons who had lived at least 50 years.

2. The older half of the people dying in 1900 had lived 30 years or more. The older half of the

people dying in 1949 had lived 66 years or more.

3. One thousand babies born in 1900 were destined to live 49,000 years. One thousand babies born in 1949 were destined to live 68,000 years.

4. Since 1900 the entire population of the United States has doubled (76 to 150 million). Since 1900 the population age 65 and over has quadrupled (3 to 12 million).

5. The LOWEST state maternal mortality rate in 1933 was 4.3. The HIGHEST state maternal mortality rate in 1947 was 2.6.

Radiologists and Socialization

The following release from the American College of Radiology presents a different picture of medical legislation than is ordinarily seen. It is printed in its entirety at the request of the College.

The American College of Radiology views with alarm and dismay all proposed programs relating to the distribution of medical services which place the diagnostic aspects of medicine in a category apart from the general practice of medicine.

The convening of the 81st Congress brought forth a number of legislative programs so worded. Examples are: S. 5, the original Wagner-Murray-Dingell bill; S. 1679, the Thomas-Murray-Dingell bill; S. 1106, the Lodge bill; S. 1456, the Hill bill; and S. 1907, the Flanders-Ives bill. The treatment of diagnostic medicine under these legislative schemes has varied all the way from pin-point socialization under S. 1106 and classification as a hospital service in S. 1907 to socialization in common with all of medicine but under the separate category of "Auxiliary Services" in S. 5 and S. 1679.

In addition to this legislation not a few prominent members of the medical profession have recently promulgated similar plans emphasizing a difference in what they have termed "the practice of the diagnostic specialties" and the practice of medicine. The American College of Radiology is most disturbed by these medical spokesmen in that they have apparently seen in the socialization of diagnostic medicine relief from demands for socialization of all medicine. Theirs is a tragic error. The medical profession and most of the rest of the nation has come to understand that medicine cannot and will not be socialized in a vacuum. The socialization of any group, or segment of a group, is but a precursor of things to come. Medicine must not weaken its stand for freedom by partial appeasement and thus fall victim to piecemeal socialization. Abraham Lincoln observed that, "No nation can long endure half slave and half free." It should be even more obvious that no profession can permanently maintain this imbalance.

50 and 2

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Case Report from the University of Kansas Medical Center

Edited by Glen R. Shepherd, M.D., and Mahlon H. Delp, M.D.

Clinical Pathological Conference*

Unexpected Death Following Surgery

DR. DELP: The case we have today is from the surgical service. Dr. Revere will brief the history for us.

DR. REVERE: This patient was a 69-year-old white woman. Her chief complaint was marked abdominal pain, for three weeks before admission. Two years prior to admission, the patient had an appendectomy which was followed one week later by a lump at the site of incision about the size of her fist. This never reduced but progressively enlarged. In the three weeks prior to admission, the mass hurt continually and she thought it enlarged. There was some pinkish drainage from the upper and lower end of the incision for about two months following the operation. There was no nausea or vomiting.

In the past history, there was an appendectomy in 1947, 11 full-term normal deliveries. The family history was negative. System review revealed some exertional dyspnea for three months, ankle edema after standing, for one year; nocturia five times in the past year, incontinence for six months; weight eight years ago 140 pounds, with rapid gain and noted increase in appetite to weight of 290 pounds 10 months ago, gradually lost to 219½ pounds at time of admission; weight loss was the result of diet. Menopause at age 45.

Physical examination showed a very obese female, age 69. Bp 170/110. Pulse 78, full and irregular. Hair coarse, skin dry and scaly. Fundi normal except for minimal A-V nicking. ENT examination negative. Thyroid slightly enlarged. Breasts negative. A few scattered coarse rales heard throughout the chest. PMI of the heart in the fifth interspace at the mid-clavicular line. There was a Grade I apical and basal systolic murmur. The pulse was normally and symmetrically spaced for many beats, then there would be four or five very close but equally spaced beats. Abdominal examination showed four-plus obesity with a large fat apron extending to several inches below the vulva; very fine old healed McBurney scar and, surrounding this, with a diameter of about 10 inches, was a soft mass which was quite tender and in which loops of bowel could be felt. Tenderness prevented deep palpation here. Examination of extremities showed minimal pitting edema of both feet. Neurological examination negative. Rectal examination negative except for three large, external, hard hemorrhoidal tags. Pelvic examination showed a chronic granulomatous soft lesion of the inferior urethral meatus; a large dif-

fuse obliterating cystocele and rectocele; cervix clean, small, completely stenosed; cervical os showed red punctate appearance; uterus could not be felt because of obesity.

Laboratory examination: urinalysis showed acid reaction, 1.036 specific gravity, faint trace albumin, sugar 6.6 per cent, acetone and diacetic negative, 4-6 pus cells/high-power field. RBC 4,700,000; WBC 5,700, 84 per cent hemoglobin, 59 per cent polys, 38 per cent lymphs, two eosinophiles, one monocyte. Wasserman and Kahn negative. NPN 24, creatinine 1.0, sugar 214 mgm. per cent, sodium chloride 480, cephalincholesterol Flocculation negative at 48 hours. X-ray of the chest showed normal chest and heart; osteo-arthritis of the dorsal spine. EKG not definitely outside normal limits. Consultation was held with Dr. Delp on second hospital day. His findings were moderate diabetes mellitus, hypertensive cardiovascular disease, arteriosclerotic heart disease (?) Class II, obesity. He suggested dietary management for the diabetes with a low caloric intake and insulin later, if necessary. The patient was placed on a 100-75-50 diabetic diet, and the diabetes seemed to be under fairly good control with diet alone.

On the seventh hospital day under spinal anesthesia, lipectomy and herniorrhaphy was done. The hernia contained incarcerated intestine and after this was dissected free, the hernia was repaired by overlapping the fascia as one layer in a vertical fashion and the large apron of fat was excised. Post-operatively the patient required gastric suction, required insulin to as much as 40 units a day while receiving intravenous fluids. On her fourth post-operative day, she developed a swollen painful, tender, cyanotic left leg. Homan's sign was negative. This was considered a thrombophlebitis. The patient was placed on dicumerol therapy, required gastric suction intermittently because of abdominal distension and vomiting, and on her 10th post-operative day her course was complicated by a wound disruption. This was repaired under general anesthesia consisting of pentothal sodium and nitrous oxide with oxygen. At that time prothrombin time was 10 per cent of normal. EKG done three days later showed sinus tachycardia of 107, with low voltage in the precordial leads but otherwise not outside the normal limits.

At about 11 a.m. on her 24th hospital day or seven days after the repair of the wound disruption, the patient started to go into shock slowly. At 1:30 p.m., physical examination revealed her to be

*From the Department of Internal Medicine and Pathology.

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dyspneic, tachypneic, and she had tachycardia with no pulse and difficulty in counting the rate at the apex. She developed cyanosis, cold skin, profuse diaphoresis; no pain, no cough, no other discernible physical findings. Blood chlorides 430, blood sugar 187. EKG showed sinus tachycardia and right bundle branch block which had appeared since the last EKG which, with associated clinical findings, suggested the possibility of pulmonary embolism. The patient was given nasal oxygen, coramine, fluids, blankets, plasma, dicumerol, and quinidine. At 3:00 p.m. her condition deteriorated further. She was given digoxin through plasma tubing without benefit. The patient died at 3:16 p.m. on her 24th hospital day.

QUESTION: How did the prothrombin time run following the wound disruption?

DR. REVERE: The day following the wound disruption, the prothrombin time was 20 per cent of normal and we did not give her any dicumerol then. Two days later it was 61 per cent of normal. The third day it was 68 per cent of normal and on the fourth day 59 per cent of normal, etc. It so happened that on the day before death she was given dicumerol and apparently we didn't give enough to bring her prothrombin time down to therapeutic level at all.

QUESTION: What was the blood sugar at the time of operation?

DR. REVERE: On the morning of operation, her blood sugar was 204 and that afternoon it was 304, after surgery. The following day it was 252, 293, etc. It didn't seem to make much difference how much insulin she had, her sugar ran around 200 which is a little high.

QUESTION: What kind of insulin did she get and at what time of day did she receive it?

DR. REVERE: Regular insulin and she had it as 10 units four times a day. She had 15 units of regular insulin with her IV fluids.

On the day she developed her thrombophlebitis she had practically no fever. On the preceding day, her temperature was as high as 100.8.

QUESTION: When was the last blood count done and what was it?

DR. REVERE: On her third post-operative day to her wound closure but the 13th post-operative day to her major surgery, the white count was 22,400 with 90 per cent polys, Hb 13.2 grams.

QUESTION: Was there any marked hypertension?

DR. REVERE: Her blood pressure was 170/110 whenever she had her EKG's. It was recorded that way for all of them apparently. On the day of her death it was 160/120.

DR. DELP: Dr. Cochran, will you show us the EKG's on this patient?

DR. COCHRAN: The first electrocardiogram taken pre-operatively simply shows sinus rhythm. The electrocardiogram taken pre-operatively is thus not really abnormal. The second, which was taken three days following repair of the wound disruption simply shows the original sinus tachycardia and no other abnormalities except low voltage in the three standard leads. Ordinarily we think of five mms as the lower limit of normal. The deflections in Lead I are something like that. In the precordial lead where the lower limit is normally nine, again these are slightly below that level. The last cardiogram, which was taken on the day the patient expired, shows a distinct change in Lead I with a marked tachycardia about 150 and the QRS complex has widened to 0.12 and slightly more. There is a deep wide S wave in Lead I. Ordinarily that means the appearance of right bundle branch block. There is a broad and late R wave in Lead I indicating that right bundle branch block has developed. The voltage still remains on the low side in the standard lead. In summary, there is a very rapid rate around 150 to 170 and probably right bundle branch block.

DR. GERMAN: X-ray of the spine five days before operation showed marked hypertrophic arthritis of the dorsal spine. The heart was normal by x-ray. The heart and lungs were considered normal by Dr. Tice. That is the only film we had. No films were taken after the patient developed her acute episode.

DR. DELP: It seems quite clear that this patient's diagnosis up to the time of death is fortified by very tangible information such as the elevation of the blood pressure which is easily verified, and the hyperglycemia as well as glycosuria, making the diagnosis of diabetes mellitus and hypertensive vascular disease assured. The diabetes mellitus was probably rather moderate. The patient also had the surgical diseases mentioned. She had a hernia following a previous operation, with incarceration of certain abdominal viscera within that hernia. I made the diagnosis of hypertensive cardiovascular disease and arteriosclerotic heart disease with a question mark. The reason I questioned it was because there was very little evidence from the standpoint of the EKG to show that this myocardium was suffering from coronary insufficiency. But being rather cautious, I desired to put the diagnosis down.

We know that coronary disease is not so common in a female unless the female has hypertension or unless she is past 60 or unless she has diabetes mellitus. Well, it happens that this patient was positive in all of those categories. So I felt that perhaps even in the absence of any marked retinal changes (al-



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though she had mild retinal changes), or marked changes in the EKG, I should make the diagnosis of coronary disease or arteriosclerotic heart disease. Now actually I classified this patient from the standpoint of being a cardiovascular risk for surgery, as a Class II patient. This was not based upon what I have heard and not upon her hypertension, but rather upon the presence of organic heart disease as well as her obesity. I don't know just how tall this patient was, but I doubt if she was more than five feet two or three inches in height and weighed very recently almost 260 pounds, so she was very obese. The diabetes in itself adds a less favorable atmosphere to the prognosis, but still I thought she was no worse than a Class II risk from the standpoint of surgery.

Now we can't be satisfied with those diagnoses, even as clear cut as they are as a final explanation of this patient's death, so we simply must probe a little bit deeper. Mr. Puntenney, may we have your discussion of this case?

MR. PUNTENNEY (student): This is a patient with complications of diabetes following surgery. The question comes up as to whether the wound disruption was contingent upon her diabetic status. If the diabetes is under control, usually there is no trouble in wound healing. However, due to the fact that the hyperglycemia was comparatively under control at the time of surgery, I don't believe the hyperglycemia had much to do with the disruption of the wound.

In regard to the cause of her death, the thrombophlebitis of the left leg may be important. Following that, embolic phenomena could have taken place accounting for the rest of the course of her illness. However, it all depends upon which textbook you are reading as to whether thrombophlebitis can actually occasion the release of emboli. For example, Cole and Elman state quite positively that they have rarely seen it in adults.

The actual cause of her death may have been either pulmonary infarction, myocardial infarction, or a hemorrhagic diathesis. I think that Dr. Revere tried to rule out the hemorrhagic diathesis by stating her prothrombin levels up to the time of death. These were considerably above the therapeutic level.

In regard to distinguishing pulmonary embolism from myocardial infarction, the symptoms they evoke are rather hard to differentiate. In the case of pulmonary embolism, the cardiogram complexes would be considerably more regular than was shown here. The patient had a rather gradual onset of her symptoms which one doesn't usually associate with a pulmonary infarction. The EKG is not too helpful in differentiating, because the signs of a myocardial infarction and a pulmonary infarction can be similar. There is a quite a bit of evidence to suggest here a

diagnosis of myocardial infarction. She is a diabetic over 60 years of age. There is a greater tendency in diabetics for arteriosclerosis, especially in the older age group. If the lesion were of a rather minimal character, then the clinical onset might not be as rapid as usually occurs. She didn't have the pain one usually associates with coronary occlusion, but a certain small percentage of myocardial infarction cases occur without pain. Thus the absence of pain isn't too significant. Although I am not sure what the diagnosis is, I strongly favor occlusion of one of the coronary vessels.

DR. DELP: Do you think this patient's diabetes was under good control with blood sugars running from 169 to 310?

MR. PUNTENNEY: I think there was quite a bit of blood sugar regulation but it certainly doesn't appear to be adequate.

DR. DELP: Would you have used protamine zinc insulin, regular insulin, or a combination of the two?

MR. PUNTENNEY: I would have used regular insulin.

DR. DELP: Why?

MR. PUNTENNEY: In the diabetic, instability often temporarily follows surgery. We have better control with a short-acting insulin.

DR. DELP: Dr. Rumold?

DR. RUMOLD: I'd like to have this patient reviewed all over again. In the first place let's visualize a very short stubby woman only about five feet tall and weighing in the neighborhood of 230 to 260 pounds. She had a tremendous incisional hernia and she had a lot of pain with it. She had been treated on the outside for three weeks before she came into the hospital, and she wasn't getting any better. In fact, she was vomiting considerably when she was put in the hospital.

After the medical department felt that they had her diabetes under control, we were given the go-ahead. From a technical standpoint, the hernia was not difficult to repair. It looked a lot worse than it really was. There was a relatively small hole in the fascia. It was repaired and about 15 pounds of abdominal fat was removed from the abdominal wall. An adequate closure was made and the operation didn't take long.

The next complication noted was that she started to cough quite a little bit and this exerted considerable pressure on her wound. Then she developed a left phlebothrombosis or thrombophlebitis, whichever you want to call it, and this caused a lot of edema and pain in her left leg. After heparin and dicumerol were started, that gradually disappeared. At the time she had her wound disruption 10 days later, her leg was not very badly swollen and she had not had any pain.

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References: 1. Dodd, K. and Minot, A. S.: *J. Pediat.*, 8:442, 1936.
2. Dodd, K. and Minot, A. S.: *J. Pediat.*, 8:452, 1936.
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At this second operation, there was absolutely no evidence that healing had taken place in the 10 days. I think one of the factors causing this was incomplete control of her diabetes. Also, we had not quite controlled the mechanical pressure on her incision and she got a little distention which produced pressure on her wound preceding the wound disruption. We had to give her a general anesthetic in order to close this wound. Usually we give a local anesthetic, but we were not able to completely close this wound without a general anesthetic. She got along very well and even had some bowel movements following the closure of the wound, and in the morning when we made rounds she was better than she had been in the past four or five days. About 11 o'clock they called me and said that she was in a state of shock and at about 3:00 o'clock she was dead.

I doubt if the death was a result of pulmonary infarction because if she had developed that I think she would have died very shortly. The most probable thing would be some sort of coronary occlusion. However, we have to consider pulmonary infarction because of the embolus in her left thigh.

Now let us see, in going back over the case, what we might have done better. The hernia was not so serious but what we could have sent her home to lose another 50 or 100 pounds of weight and I think she would have been in much better shape. But this hernia was so large that treatment was difficult. We couldn't even be sure what was in the hernia. It felt like her whole abdominal contents were in that hernia. She had such pain, and people do die of pain, that we were driven to desperation to do something for this patient.

DR. DELP: Dr. Cochran, do you think from your knowledge of the history and your knowledge of the EKG's that this patient died of myocardial infarction or coronary occlusion?

DR. COCHRAN: There was a possibility the patient had pulmonary embolism in view of the clinical background. She had a thrombophlebitis, was obese, and had just undergone two operations. Then she rather suddenly expired within a period of several hours without physical pain and with progressive dyspnea and cyanosis and with an electrocardiogram showing subsequent changes from a relatively normal one to one which we too frequently see in the early stages of right bundle branch block following pulmonary embolism, presumably due to acute cor pulmonale. I would simply lean toward that diagnosis. It is possible the patient could have had an occlusion. Occasionally there are early changes which are not recorded in the electrocardiogram. Taking all findings together, I consider it is more likely that the patient had pulmonary embolism.

DR. DELP: If the patient did not have pulmonary embolism, how do you explain that EKG?

DR. COCHRAN: It's a little difficult. In the first place, a right bundle branch block can occur anywhere along the clinical course of a patient with hypertensive degenerative heart disease. Ordinarily if it is due to an embolism and infarction, and occasionally we see right bundle branch block occurring with infarction, it does not obscure the evidence of an infarction and you can make both diagnoses like myocardial infarction plus right bundle branch block. There is no definite evidence of infarction on this EKG.

DR. DELP: Does anyone else have any suggestions as to the cause of death?

DR. VALK: Would it be unusual for a patient to develop a coronary occlusion with the prothrombin time as low as this?

DR. DELP: Well, we don't know exactly how low that prothrombin time was. It probably was somewhere close to 70 per cent of normal.

DR. VALK: On the day of operation it was 20 per cent.

DR. DELP: Yes, I know, but then we have subsequent readings which went to 60 per cent, 68 per cent, and 69 per cent. Actually at the time of death, although the patient received some dicumerol on that day, we have no good evidence that it had much of an effect on the prothrombin time.

COMMENT: The patient had received gastric suction for three days post-operatively and dicumerol was started on Monday with 150 mgm. by tube, and then on Tuesday, Wednesday, and Thursday she had 200 mgm. a day with no appreciable effect on her prothrombin time.

DR. DELP: So coronary thrombosis could have occurred as well as myocardial infarction. Of course, we do know that in cases of patients primarily suffering from myocardial infarction, they will actually have complications with prothrombin levels perhaps 40 per cent of normal, 30 per cent of normal, and even much lower than that.

DR. CALKINS: I can't tell from the protocol just what part peritonitis might have played toward the end of this patient's illness.

DR. DELP: Dr. Revere, do you consider peritonitis as being a possible cause for the final collapse state?

DR. REVERE: I didn't think the patient had peritonitis, but we always talk about it when we close up the wound. Most of our patients do not have peritonitis following surgery.

DR. DELP: Dr. Valk, do you think this patient had peritonitis?

DR. VALK: No.

DR. RUMOLD: Dr. Delp, I would like to ask you a question. Do you think that this patient's blood sugar was adequately controlled?

DR. DELP: No, Dr. Rumold, I do not think this

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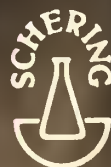
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patient's diabetes was adequately controlled. While we don't know for certain that has too much to do with wound healing, we were told in the past that it does. I think that probably if she had been under excellent control prior to surgery, her blood sugars would have been lowered so they would have stayed below 200. However, I think the internist is always a little cautious when he thinks the patient probably has coronary disease. He is cautious in administering large doses of insulin because he certainly wishes to avoid hypoglycemic shock, since it is not good for the patient and is likely to produce coronary thrombosis and myocardial infarction in itself.

This patient's diabetes was a bit unusual as diabetes in aged patients frequently is. It is not the type of diabetes that you see in the young individual who is insulin-sensitive. Perhaps this patient was not too resistant to insulin, but she was an aged patient, had rather high blood sugars with no diacetic acid or acetone ever appearing. The type of diabetes that we see in the patient who is extremely obese is similar to the type of diabetes we see in the patient who has primary liver disease as the cause of his hyperglycemia. It probably should be so called rather than identifying it with the more truly classical diabetes mellitus as seen in young people.

Pathological Findings and Discussion

DR. CHANEY: There is a partially healed incision 38 cm. in transverse measurement at the umbilicus. There is a 12 cm. extension downward from the center of this incision. The abdomen is protruberant with 10 cm. fat and a pocket of serosanguinous foul-smelling fluid in the area of the position of fat and hernial tract. The umbilicus is involved in the surgical incision. The left leg is markedly swollen and edematous with some increased redness. A focal granular peritonitis appears in the region of the incision and there are a few soft friable adhesions between occasional loops of small gut. Four inches of small intestine are herniated through a dense fibrous ring in the region of the femoral canal.

Heart weight is 312 grams, conical shape, and flabby. The coronary arteries show minimal sclerosis. The lungs are normal in weight and consistency except for scattered areas of superficial adelectasis. Pulmonary vessels are patent. The liver weighs 2,070 grams and is not grossly remarkable. Pancreas, kidneys, and adrenals are not remarkable.

DR. BOLEY: A histological diagnosis of a myocardial infarction in a matter of four hours is difficult. Mallory, in 1939, had a very good article on myocardial infarction. His statement is that up to about one hour, it is very difficult to find any change. At that time, you will have a beginning change in the staining of the myocardial fibers in

that they will stain more acidophilic. You will notice in this section of the right myocardium that the number of leucocytes is increased. The stroma is waxy and edematous but there are many more polys here than you would expect to find. Now, according to Mallory, leucocytes make their appearance after 12 hours. So that makes a little bit of doubt in our minds that this condition had existed only four hours.

Another thing that is present here is the variation in staining. It isn't marked, but once in a while we run across fibers a little more acidophilic which would suggest early necrosis. Under higher power and with H and E staining, we could show that there is some loss of cross-striations, and that in itself would tend to establish the duration of the myocardial infarction.

None of the left ventricle sections show inflammatory infiltration. So while we do feel that we have an early beginning infarction in this case, all we can say positively is that it is acute myocarditis. We have to stretch it a little to call it infarction on microscopic evidence.

This patient was a diabetic and this brings us to a section of pancreas. Here is an islet which shows columnar hyperplasia and another islet has marked amounts of hyalin with lack of islet cells. That in itself doesn't say diabetes, but it is a finding that does occur more commonly in diabetics than it does in normal individuals. The liver was mentioned and insofar as liver damage is concerned, you might like to see the amount of fat in the liver. Most of the fat is around the central zones. However, we do find an increased number of lymphocytes in the portal spaces. There is also an increased number of polys there as well as in the sinusoids.

The right heart measured six mm. in thickness, the left ventricle measured 17. That represents a little more hypertrophy of the right heart than it does the left and we find in the lung a little increased thickness in many of the arterial walls and a tendency for hyalinization. That is more particularly noted around the splanchnic area, in the adrenals. So that our conclusion in this case, Dr. Delp, is that we have changes of a generalized arteriosclerosis which isn't marked, in fact it is even slight in the coronary arteries. We have arteriolosclerosis which would give rise to a hypertension and we think this individual died with acute myocardial infarction.

The complete anatomical diagnosis is: arteriosclerosis of the aorta and splenic arteries, moderate and of the coronary arteries, slight; arteriosclerosis of the pulmonary and splenic vessels; acute congestive myocarditis (early myocarditis); congestions and edema of the lungs, slight. Partially healed abdominal incision with focal fat necrosis; fibrinous

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peritonitis, focal; phlebothrombosis, left leg; hyalinization and columnar hyperplasia islands of Long-erhans; vacualization of the renal epithelium; fatty metamorphosis of the liver; obesity.

DR. WAHL: I am not sure that this patient died of acute myocardial infarction. There is no question in my mind that this patient died of acute myocardial failure but I don't say that there is infarction there. I do say that this heart is a soft, flabby heart and the heart shows extensive degenerative changes in addition to numerous areas of myocardial fiber replacement by chronic clumps of polys. There is definite heart damage of some type, no question about that.

Summary

The diabetic patient, the obese patient, or the patient with hypertension always presents added hazard to the surgeon. As illustrated in this case it is desirable to resolve as many of these hazards as possible before surgery. If surgery had not been immediately indicated, as here, the outcome might have been altered by a prolonged period of weight reduction and closer diabetic management.

Kansas Medical Students' Union Building

Leaders of Kansas medicine have been mindful of the lack of facilities for students, both undergraduates and those taking refresher courses at the University of Kansas medical school. Some of the schools such as the University of Minnesota have solved the problem with benefits and comforts particularly for their postgraduate students.

Many months ago Dr. Franklin D. Murphy, dean of the medical school, conceived the very fine idea of getting a new student union building on the Kansas City campus as a memorial to students, faculty, and men of Kansas medicine. The Francisco Memorial Funds, on hand, are to be used in the basement of the proposed building for gymnasium facilities and a floor consisting of modern rooms for Kansas doctors and their wives who happen to be taking advantage of postgraduate or refresher courses, for which there were 1000 registrations last year. This floor would be considered the home and headquarters of Kansas medical men.

Dr. Murphy proposed the plan to the council some months ago, and it was unanimously indorsed. Dr. F. R. Croson was selected as chairman. The organization is set up by councilor districts with the counties as individual units having one or more chairmen. There are, however, some special committees for the larger counties. It is urged that every county, if not already organized, should have its chairmen selected at once. Most county meetings will be resumed in September, and this memorial fund should be on each county's order of business.

Funds are paid into the central office, 512 New

England Building, Topeka. When money is received, the donor is promptly mailed a receipt. Save this receipt for your income tax return. The central office has already received some substantial contributions, and one Kansas physician pledged \$5,000, half of which has been paid.

Kansas medicine has occasionally been presented with a worth while opportunity. At the time when many of our members were in service, Kansas medicine made possible postgraduate instruction for those men upon their return. Kansas medicine and friends now have another golden opportunity to do something for students and graduate men of medicine which will reflect credit to ourselves and our professional posterity. Let us take advantage of this opportunity to build a living memorial for medical men at the University of Kansas Medical Center.—J. W. Randell, M.D., *Vice Chairman*.

Grant to University of Kansas

The University of Kansas School of Medicine has received a three-year grant totaling \$36,000 from the United States Public Health Service, according to an announcement made last month. The sum of \$10,000 was made available for the fiscal year ending June 30, with authorizations of \$12,000 and \$14,000 for the two years following.

The funds will be allotted to the Department of Psychiatry. Dr. William Roth, Jr., chairman of the department, reports the grants will help finance an expanding program of undergraduate training in clinical psychiatry through an enlarged faculty.

Clinical Conference in Kansas City

The Kansas City Southwest Clinical Society will present its 27th annual fall clinical conference, October 3-6, 1949. The four days will be devoted to scientific presentations, clinicopathologic conferences, citizen-physician forums, round table luncheons with question and answer periods, scientific and technical exhibits, movies and entertainment.

Speakers to be heard are: Dr. Edgar V. Allen, Rochester, medicine; Dr. Harry E. Bacon, Philadelphia, proctology; Dr. Grayson L. Carroll, St. Louis, urology; Dr. O. T. Clagett, Rochester, surgery; Dr. R. W. Danielson, Denver, ophthalmology; Dr. Aubrey Hampton, Washington, radiology; Dr. Lewis M. Hurxthal, Boston, medicine; Dr. Frank H. Lahey, Boston, surgery; Dr. Virgil H. Moon, Winston-Salem, pathology; Dr. Walter L. Palmer, Chicago, medicine; Dr. John L. Parks, Washington, otolaryngology; Dr. I. S. Ravdin, Philadelphia, surgery; Dr. Wolf W. Zuelzer, Detroit, pediatrics.

Programs may be obtained from the Kansas City Southwest Clinical Society, 630 Shukert Building, Kansas City 6, Missouri.



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Medicine in Europe

Editor's Note. The following report on medical practice in European countries was received August 31, 1949, from Dr. F. R. Croson, Clay Center, president-elect of the Kansas Medical Society. This is the first of a series of articles Dr. Croson will write as he and Mrs. Croson tour Europe.

To the officers and members of the Kansas Medical Society:

To date we have visited in England, Scotland, Norway and Sweden. We arrived in Denmark this afternoon and as yet have not had time to collect any information here.

The medical situation in England is chaotic—as is their economy. I think it is advisable to consider the background for a moment. The Labor Government came into power at the end of a long and expensive war. Men were anxious to get out of the army and navy and they were told to support the Labor ticket and they would be demobilized immediately. Many people in England and Scotland are of the opinion that this one political move is responsible for their government today. I heard many remarks from many people. Some were: "They promised us everything and are giving us nothing." "Rationing is more severe now than it was during the war." "We need Churchill back." "The Labor party is allright and has done the best it can but it has no statesmen, leaders, or brains."

One must remember also that the British have suffered under a severe ration for ten years. Two ounces of meat a week—the equivalent of a dozen wieners or two cans of spam a month—one egg every week, and many weeks go by without any. Two ounces of cheese a week and sweets are rigidly rationed again—they were off ration for a few months. Clothing is off ration but here they must pay a 30 per cent purchase tax to buy any. Purchase taxes are from 30 to 100 per cent on all articles off ration. Cars cost about 250 per cent more than in the United States. The diet is very monotonous. One rapidly tires of boiled vegetables and small portions of meat or fish. They have no fat to fry any foods. Steak and roast beef are only memories.

To get back to the medical situation. The attitude of the profession is one of suspicion because the promises made to the profession have not been fulfilled. The plan has been in operation for 14 months and as yet the doctors have not received their contracts. There is a sharp division between general practitioners and specialists. Really about the only things a general practitioner needs are an office, a telephone, and some government forms. An abdominal case is referred to the surgeon, a renal case to the urologist, a heart case to the cardiologist, etc. They do no real work in their offices and are amazed that the American doctor does minor surgi-

cal procedures in the office instead of sending all patients to the hospital.

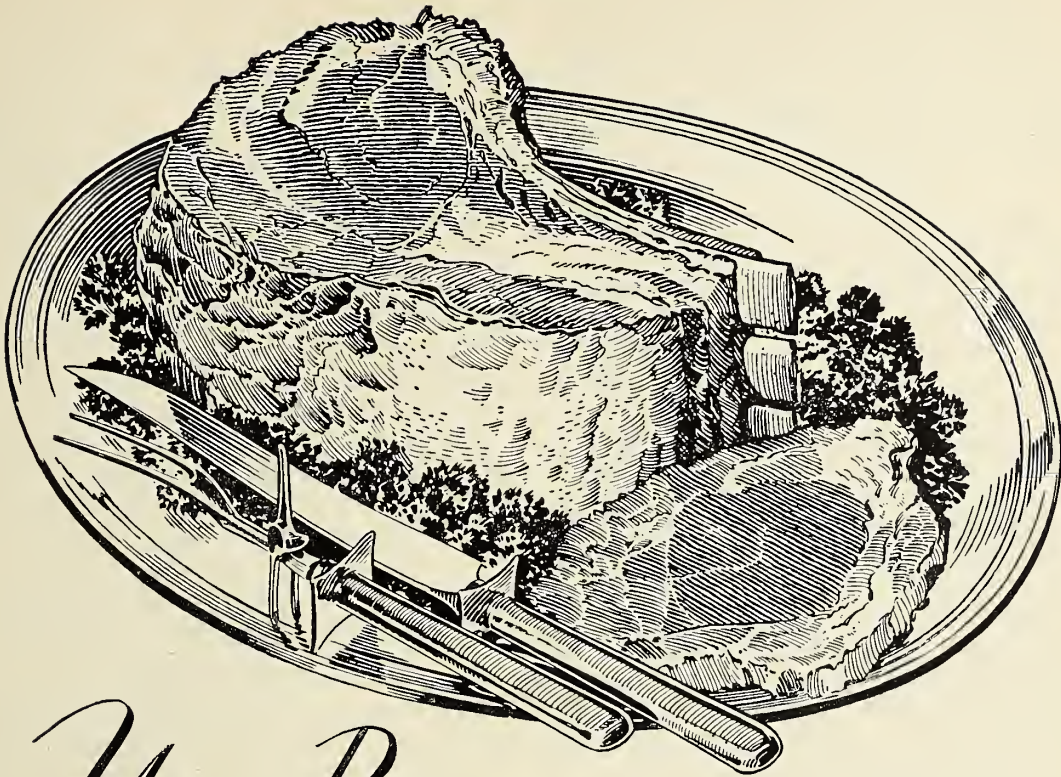
The result of such methods is that the hospitals are swamped. They are understaffed as far as nurses and doctors are concerned and are woefully short in equipment and even medication. Tonsillectomy patients must wait for six months to two years. I had one gynecologist in Scotland tell me that he had perineal repair cases noted for operation which he knew would have to wait three to five years before they would be hospitalized. Some locations have case workers who decide which cases shall be hospitalized. These case workers are registered nurses but due to the acute shortage of nurses some of them have been called back to hospital work and as a result there is no one who can state with authority which case may be admitted to the hospital. Just one phase of the chaos! Most obstetrical cases are delivered in the homes. A visiting nurse tries to visit the home prior to the labor and makes suggestions which are supposed to be a help to the physician and to add a margin of safety for the expectant mother.

The general practitioner receives 16 shillings (\$3.21) per patient per annum. He is allowed to have as many as 4,000 patients on his list but the average is about 2,000. To this fee is added mileage and an obstetrical fee (for prenatal, delivery and postpartum care) of seven pounds and ten shillings (about \$30).

To become a specialist one must complete an internship and then become a Junior Registrar serving in a hospital for a few years at 800 pounds per year. After an indefinite time and some examinations he is promoted to a Registrar and receives 900 pounds per year. He is then advanced after proper time and examinations to a Senior Registrar at a salary of 1,200 pounds per year but at this time he must be 32 years of age. Then at 40 years of age he may be appointed a Consultant or Specialist by a committee of the B.M.A. in his specialty. Even the committee regards its task as absolutely impossible. This same committee has the authority to increase a consultant's salary 500, 1,000, or 2,500 pounds a year for "unusual" accomplishments. The consultant's salary is 1,800 pounds a year, and 5,250 pounds a year is absolutely the maximum. That is \$21,000 at the current British exchange.

One surgeon told me that the entire plan was unnecessary as all the people of England were obtaining good medical care before the plan. He also said that if such a plan had to come into effect it was at least 50 and perhaps 100 years too soon.

Quoting in part from New York Times International Air Edition, August 25, 1949, headlined "British weigh cuts in social services. London financiers call step necessary to save dollars.



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*McLester, J. S.: Protein Comes Into Its Own, J.A.M.A. 139:897 (April 2) 1949.

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* * *

Norway presents a picture of completely socialized medicine for over 30 years. They are all happy about it—patients and doctors—and it works beautifully. It is absolutely compulsory for the low income group and voluntary for the higher income groups. They all subscribe to the plan. It provides all medical care, except the cost of the first call. This is a minimum of six kroner (\$1.40) which the patient must pay but two-thirds of this is eventually refunded to him. It does not pay for medicine nor for dental work except extractions. One surgeon there told me that he belonged to the plan and it cost him 125 kroner (\$25) per year for himself and his family.

The hospitals are large, modern and adequate and are well staffed. Dr. Semd, chief of the surgical staff at the Ullevaal Hospital in Oslo, told me that he had an excellently trained staff. He also told me that the men under him loved their work but at the same time assured me that none of them would ever have much opportunity to get ahead in the world but after all that was not necessary as everyone is a charge of the state at 65 years of age.

Norway is completely nationalized along other lines also. One must remember too that it is a small country with three million inhabitants and they are all (98 per cent) Norwegians!!

* * *

I was of the opinion that Swedish medicine was entirely socialized but found that it was not. A bill has been passed and socialization will become national next year. There is a lot of socialization in Sweden, however. Much of it is on a cooperative basis but they do not regard it as such.

The city of Stockholm owns a large hospital and any resident of Stockholm, rich or poor, may come there for treatment for a very small sum—about a dollar a day. I spent a morning at the Sodersjukhuset hospital and met Dr. Branborg, chief of the surgical staff, but he could not talk English and I was referred to Dr. Lindo who was very gracious to me. I met him at 9:00 a.m. and we went through the surgical wards and at 9:40 all the surgical staff went to the x-ray department to review all the films taken the day before. The entire staff views these films in three groups, the brain surgeons, the general surgeons and urologists and then the internists. After the review the surgery for the day began.

There are two separate and distinct surgical staffs in this hospital, and friendly competition as to results is very keen. Each staff is composed of a chief, six first assistants who are men who have had from six to 18 years surgical training, and nine second assistants who have done less than six years of surgery. The first assistants actually do most of the work. The staff organization of the other branches of medicine is similar. All assistants who work for the government are moved about Sweden from place to place and have appointments which vary from one to six years.

Everyone everywhere is interested in American medicine and I constantly find myself being questioned rather than being the questioner.

I shall try to get a picture of the medical practice wherever I may be and pass it on to you. Lots of social aspects enter into medicine but I will try to keep them at a minimum.

Sincerely,

F. R. Croson, M.D.

Urology Award

The American Urological Association offers an annual award of \$1,000 for essays on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been in such specific practice for not more than five years and to residents in urology in recognized hospitals.

Information may be secured from Dr. Charles H. de T. Shivers, Boardwalk National Arcade Building, Atlantic City, New Jersey.

Grant for Tularemia Research

A grant of \$5,040 by the National Institute of Health to Cora M. Downs, Ph.D., University of Kansas, Lawrence, to continue a study on Bacterium tularensis was announced last month by the United States Public Health Service. The study, begun under a former grant, is specifically on "the pathogenesis of tularemia with special emphasis on the virulence and immunogenic factors in various strains of Bacterium tularensis."

This project is one of 217 studies in 94 institutions supported by such grants, designed to provide new scientific data on a wide variety of human ailments. Recommendations for grants are made by the National Advisory Health Council, and the program is administered by the Division of Research Grants and Fellowships, National Institutes of Health.

A paper on the subject of tularemia, written by Dr. Robert A. Jordan and Dr. Downs, was printed in the August issue of the Journal.

ANNOUNCING THE NINETEENTH ANNUAL FALL CONFERENCE OF THE OKLAHOMA CITY CLINICAL SOCIETY—OCTOBER 24, 25, 26, 27, 1949 DISTINGUISHED GUEST LECTURERS

ERNEST E. IRONS, M.D., *President, The American Medical Association*, Chicago, Illinois
LAUREN V. ACKERMAN, M.D., *Pathology*, Associate Professor of Surgical Pathology and Associate Professor of Pathology, Washington University School of Medicine, St. Louis, Missouri
WILLARD M. ALLEN, M.D., *Obstetrics and Gynecology*, Professor and Head of the Department of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, Missouri
JOSEPH S. D'ANTONI, M.D., *Medicine*, Professor of Clinical Tropical Medicine, University of Tulane, Senior Visiting Physician, Charity Hospital, New Orleans, Louisiana
RALPH K. GHORMLEY, M.D., *Orthopedic Surgery*, Professor of Orthopedic Surgery, Mayo Foundation, Graduate School of the University of Minnesota, Rochester, Minnesota
HORACE L. HODES, M.D., *Pediatrics*, Associate Professor of Pediatrics, Johns Hopkins School of Medicine and Medical Director, Sydenham Hospital, Baltimore, Maryland
JOHN F. HOLT, M.D., *Roentgenology*, Associate Professor of Roentgenology, University of Michigan School of Medicine, Ann Arbor, Michigan
M. DIGBY LEIGH, M.D., *Anesthesiology*, Director, Department of Anesthesiology, Vancouver General Hospital, Vancouver, B.C., Canada
FRANCIS M. LYNCH, M.D., *Dermatology*, Clinical Professor, Division of Dermatology, University of Minnesota School of Medicine, Minneapolis, Minnesota

CARL A. MOYER, M.D., *Professor of Experimental Surgery*, Southwestern Medical College of the Southwestern Medical Foundation, Dallas, Texas
LOUIS H. NEWBURGH, M.D., *Internal Medicine*, Professor of Clinical Investigation, University of Michigan School of Medicine, Ann Arbor, Michigan
JOHN PARKS, M.D., *Obstetrics and Gynecology*, Professor of Obstetrics and Gynecology, George Washington University School of Medicine, Washington, D. C.
DALTON K. ROSE, M.D., *Urology*, Professor of Clinical Genito-Urinary Surgery, Washington University School of Medicine, St. Louis, Missouri
ARNO E. TOWN, M.D., *Ophthalmology*, Professor of Ophthalmology, Jefferson Medical College, Philadelphia, Pennsylvania
JAMES ROSS VEAL, M.D., *Surgery*, Associate Professor of Surgery, Georgetown University School of Medicine, Washington, D. C.
JOSEPH B. VANDER VEER, M.D., *Internal Medicine*, Assistant Professor of Clinical Medicine, University of Pennsylvania School of Medicine and Assistant Professor of Cardiology, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania
JOHN M. WAUGH, M.D., *Surgery*, Professor of Surgery, Mayo Foundation, Graduate School of the University of Minnesota, Rochester, Minnesota

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COX, KENNETH E., M.D., F.A.C.S., Instructor in Gynecology and Obstetrics, University of Kansas; Diplomate, American Board of Obstetrics and Gynecology.
ECKLES, LUCIUS E., M.D., Pediatrician, Topeka; Diplomate, American Board of Pediatrics.
HASHINGER, EDW. H., M.D., F.A.C.P., Clinical Professor of Medicine and Chairman, Department of Postgraduate Medical Education, University of Kansas; Diplomate, American Board of Internal Medicine.
LEGER, LEE H., M.D., F.A.C.P., Assistant Professor of Medicine and Director of Laboratories, University of Kansas; Diplomate, American Board of Internal Medicine.
LEMOINE, ALBERT N., JR., M.D., Assistant in Ophthalmology, University of Kansas; Diplomate, American Board of Ophthalmology.
LORHAN, PAUL H., A.B., M.D., F.A.C.P., F.I.C.A., Clinical Professor of Surgery (Anesthesiology) and Chairman, Section of Anesthesiology, University of Kansas; Diplomate and Adjunct Member, American Board of Anesthesiology.
McCONCHIE, JAMES E., M.D., Instructor in Radiology, University of Kansas; Diplomate, American Board of Radiology.
MORGAN, PHILIP W., M.D., F.A.C.P., Lecturer in Medicine, University of Kansas; Diplomate, American Board of Internal Medicine.
ROMBOLD, CHARLES R., M.D., F.A.C.S., Orthopedic Surgeon, The Wichita Clinic; Diplomate, American Board of Orthopaedic Surgery.
RYAN, EDWARD J., M.D., F.A.C.P., Internist, Emporia; Diplomate, American Board of Internal Medicine.

SUTTON, RICHARD L., JR., M.D., Professor of Dermatology and Syphilology and Chairman of the Department, University of Kansas; Diplomate, American Board of Dermatology and Syphilology; Consultant, Dermatoses Investigations Section, U.S.P.H.S.; also to Ellis Fischel State Cancer Hospital, Columbia, Mo.

SUBJECTS TO BE DISCUSSED

Surgical Emergencies of the Abdomen.
The Enlarging Field of Surgery in Children.
Analgesia in Obstetrics.
Late Complications of Pregnancy and Labor.
Infant Feeding.
Upper Respiratory Diseases.
A Consideration of the Aging Processes.
Treatment Principles for the Aged.
Laboratory Methods of Interest to the General Practitioner.
Management of Injuries to the Eye and Adnexa.
Management of Infections of the Lids, Conjunctiva, Cornea and Iris.
Spinal Anesthesia.
The Conduct of Anesthesia During Abdominal Surgery.
X-Ray in General Practice; Gastro-Intestinal; Chest.
The Electrocardiogram; and Asset and a Liability.
Treatment of the Patient with Heart Disease.
"Doctor, I'm Down in the Back."
Femoral Shaft Fractures; the Unsolved Fracture.
Diabetes Mellitus—Practical Considerations.
Recent Advances in Endocrinology.
Contact Dermatitis and its Complications.
Cancerous Diseases of the Skin.

ACTIVITIES OF MEMBERS

Dr. F. E. Kunce, who has been on leave of absence for three years while residing in La Jolla, California, has returned to Kansas and is now practicing in Wichita.

* * *

The Arkansas City Clinic announces that Dr. Roscoe F. Morton, specializing in internal medicine, is now a member of the staff. He was graduated from the University of Arkansas School of Medicine in 1942, spent three years in the Army medical corps, and has just completed a three-year residency in St. Louis.

* * *

Dr. Thomas Hood, who has recently been acting director of local health administration for the Kansas State Board of Health, has been named city-county health officer for Topeka and Shawnee County. He formerly was chief of the Cowley County health department and more recently studied at Harvard University School of Public Health.

* * *

Dr. L. J. Brethour, Junction City, has been named representative of the Geary County Medical Society on the city-county board of health. He will serve as its chairman.

* * *

Dr. R. S. Roberts, who has been practicing in Wichita, has moved to Ottawa and has opened an office there.

* * *

Dr. J. B. Ungles, Satanta, who recently retired from practice, and Dr. Elbert McNeil, who recently began practice in Satanta, were guests of honor at a community reception at the Satanta high school July 22.

* * *

Dr. G. A. Westfall, Jr., who recently completed a residency in medicine at Winter Veterans Administration Hospital, Topeka, has joined the staff of the Hertzler Clinic, Halstead.

* * *

Dr. Ralph Ball, Manhattan, announces that Dr. Don E. Miller and Dr. Victor C. Hackney are now associated with him in practice. Dr. Miller has been doing surgical and pathological research in Wichita since his release from the Army medical corps. Dr. Hackney has completed a year's residency in surgery at New Haven, Connecticut, and a year in pathology at the University of Oklahoma.

* * *

Dr. John Thurlow, Hays, announces that Dr. John Steward Moore, Washington, D. C., is now associated with him in practice. Dr. Moore recently completed a course in orthopedic surgery at the

University of Pennsylvania Hospitals, Philadelphia.

* * *

Dr. Doyle A. Shrader, who recently completed a residency at General Hospital, Kansas City, Missouri, has opened an office in Des Moines, Iowa.

* * *

Dr. J. A. Mahre, St. Louis, is now associated in practice with Dr. E. C. Petterson, Plainville. He has just completed a year at St. Louis City Hospital as assistant resident in internal medicine.

* * *

Dr. Hector Morrison, Smith Center, began his 50th year of practice on July 10.

* * *

Dr. J. T. Terry, who has been on the staff of the Achenbach Memorial Hospital at Hardtner since it opened in 1941, has announced his resignation.

* * *

Dr. John R. Adams of the Menninger Clinic staff, Topeka, spoke on "Psychology and the Soldier," before the officers of the Ground Service School at Fort Riley, July 27.

* * *

Dr. F. L. Feierabend, Kansas City, spoke to the Rotary Club there on "Voluntary Health Programs" at a meeting held in August.

* * *

Dr. W. P. Callahan, Jr., was appointed director of laboratories at St. Francis Hospital, Wichita, last month. He succeeds Dr. C. A. Hellwig, laboratory director there for 25 years, who resigned because of poor health.

* * *

The Eddy Clinic, Hays, announces that Dr. Philip J. Clark is now a surgeon on its staff. Dr. Clark is a graduate of the University of Chicago School of Medicine, was a resident at Deaconess Hospital, Boston, for two years, and has been at the University of Kansas Medical Center for the past three years.

* * *

Dr. John Aldis, formerly of Council Grove and Emporia, recently completed a two-year residency at Kansas City General Hospital and is now on the staff of the Fort Scott Clinic and Hospital.

* * *

Dr. J. W. Randell, Marysville, spoke at a recent meeting of the Marysville Chamber of Commerce on the dangers of socialized medicine.

* * *

Dr. Harlan H. Crank of the Menninger Foundation, Topeka, gave a series of lectures at a post-graduate course at the School of Medicine of Florida University recently. He spoke on convulsive disorders, anxiety states, alcoholism and psychiatric problems of those past middle age.

ANNOUNCEMENTS

September 6-10—27th Annual Session, American Congress of Physical Medicine, Netherland Plaza Hotel, Cincinnati, Ohio. Address American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

September 26-28—Annual Meeting Southwestern Surgical Congress, Shamrock Hotel, Houston, Texas. All physicians invited.

September 28—Sixth Annual Meeting American Medical Writers' Association, Jefferson Hotel, St. Louis, Missouri.

September 28-30—14th Annual Meeting, Mississippi Valley Medical Society, Jefferson Hotel, St. Louis, Missouri. No registration fee. Address Harold Swanberg, M.D., secretary, M.V.M.S., 209-224 W.C.U. Building, Quincy, Illinois.

October 17-23—Clinical Congress, American College of Surgeons, Chicago. Including Sixth Inter-American Congress of Surgery. Headquarters at Stevens Hotel. Address Department of Public Relations, 40 East Erie Street, Chicago 11, Illinois.

October 24-29—Course in Preclinical Science in Internal Medicine, American College of Physicians, at Washington University School of Medicine and St. Louis University School of Medicine, St. Louis, Missouri. Address E. R. Loveland, Executive Secretary, 4200 Pine Street, Philadelphia 4, Pennsylvania.

October 27-29—Course in Gastrointestinal Surgery, Boston City Hospital, Boston, Massachusetts. Address National Gastroenterological Association, Department GSJ, 1819 Broadway, New York City.

November 7-12—14th Annual Assembly and Convocation, International College of Surgeons, United States Chapter, Atlantic City, New Jersey. Open to all doctors of medicine interested in surgery. Address inquiries to Arnold S. Jackson, M.D., Secretary, Jackson Clinic, Madison 4, Wisconsin.

November 9—Third Annual Southwest Regional Cancer Conference, Blackstone Hotel, Fort Worth, Texas. Hosts, Tarrant County Medical Society and Tarrant County Unit, American Cancer Society. No registration fee. Address, Tarrant County Medical Society, 209 Medical Arts Building, Fort Worth 2, Texas.

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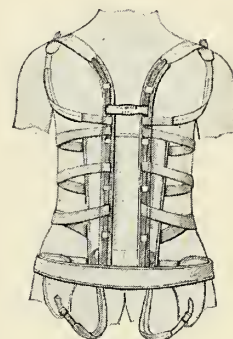
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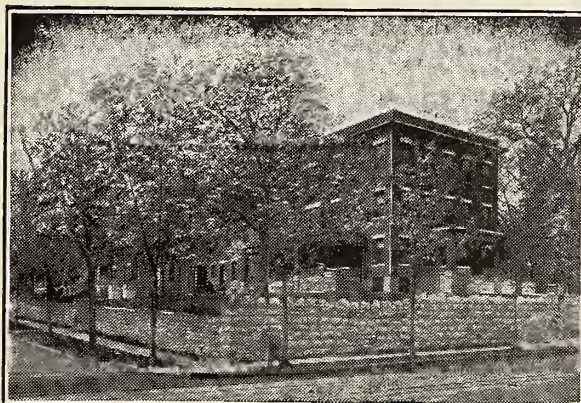
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Business Manager

Dr. J. L. Mothershead, Denton, has been appointed commander of the medical unit at Denton, now being organized for attachment to the 154th Artillery Battalion, 35th Division, Kansas National Guard.

* * *

Dr. D. Cramer Reed was guest speaker at a meeting of the Wichita Cooperative Club last month. He spoke on developments in cancer research.

* * *

Dr. L. L. Robbins and Dr. Robert Foster, of the Menninger Foundation, Topeka, were speakers at the American Home Economics Association meetings in San Francisco in July.

* * *

Dr. William Menninger, Topeka, was in Geneva, Switzerland, last month to attend a meeting of the mental health section of the World Health Organization. He was named chairman of the group.

* * *

Dr. John L. Morgan, formerly of the Mayo Clinic, Rochester, Minnesota, began practice in internal medicine in Emporia September 2, in association with his brother, Dr. Philip W. Morgan, and Dr. E. J. Ryan.

Danger from Fluorescent Lights

With the growing popularity of fluorescent lighting has come a new health hazard. Industrial hygienists declare that there is no danger involved in the use of fluorescent tubes nor in handling unbroken tubes. It is only when these are broken that danger results.

Fluorescent tubes are coated inside with a powder containing beryllium. If this powder gets under the skin wound healing may be delayed or chronic inflammation may result. Beryllium has also caused tumor like growths that eventually require surgery for removal.

Anyone accidentally breaking a fluorescent tube should be advised to watch all exposed areas of the skin and to change to non-contaminated clothing. Beryllium dust entering the eyes is considered particularly dangerous, and persons having such experience should receive medical care immediately.

Physicians might advise the public locally through the press that there is nothing hazardous about fluorescent lighting but that burned out tubes should be disposed of with care. They should not be burned in an incinerator nor should children be permitted to play with them.

Because of recent injuries manufacturers are experimenting with a new phosphorous substance to replace beryllium, but it will probably be some time before the present supply of tubes has been used and finally discarded.

DEATH NOTICES

GEORGE ALBERT SPRAY, M.D.

Dr. G. A. Spray, 68, eye, ear, nose and throat specialist in Wichita, died at his home July 21. He was graduated from the University College of Medicine of Kansas City in 1911 and began practice immediately in Kansas, first in Augusta. During the past 25 years he had practiced in Wichita and was a member of the Sedgwick County Medical Society.

* * *

CHARLES B. STEPHENS, M.D.

Dr. Charles B. Stephens, 62, institutional physician in Kansas and Missouri, died July 20 while visiting in Holton. A graduate of the Kansas City College of Medicine and Surgery in 1916, Dr. Stephens practiced in LaHarpe and Iola originally. He later was on the staff of the state hospitals at Osawatomie and Topeka and more recently practiced at the state hospital in Nevada, Missouri. He was a member of the Miami County Medical Society.

* * *

JOHN SELBY VERMILLION, M.D.

Dr. J. S. Vermillion, 72, an honorary member of the Sedgwick County Society, died August 9, two years after his retirement. After his graduation from the College of Physicians and Surgeons, Kansas City, in 1904, he practiced in Oklahoma and in Sedan, moving to Maize in 1919. He continued to practice there until his retirement, specializing in eye, ear, nose and throat work.

* * *

SIMON PETER STEELSMITH, M.D.

Dr. S. P. Steelsmith, 93, a practicing physician in Abilene for more than 64 years, died at his home there August 22. He was a graduate of the Medical College of Indiana in 1881, and had been in practice since that time, although in recent years he had not been active. He was an honorary member of the Dickinson County Medical Society.

* * *

PAUL EDWARD BELKNAP, M.D.

Dr. P. E. Belknap, 57, pediatrician, died at his home in Topeka August 29. He was a graduate of the University of Kansas School of Medicine in 1918 and received his Kansas license the same year. He was an active member of the Shawnee County Medical Society. He took an active interest in pediatric work throughout the state and was a member of the American Academy of Pediatrics.

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ABSTRACTS FROM CURRENT LITERATURE

Skull and Brain Injuries

Surgical Treatment of Skull and Brain Injuries. By Rudolph Jaeger, Ind. Med., 18, 47-51, Feb., 1949.

In the early management (first 24 hours) of head injury cases, one can almost completely disregard every aspect of the case except that of shock and the control of external hemorrhage. Treatment of shock from head injury differs not one bit from the treatment of any other type of shock. If in acute pain and conscious enough to feel it, the patient should be given morphine. Give fluids by vein and blood transfusion if there has been blood loss. Forget about x-rays of the skull, intravenous 50 per cent glucose, sucrose or spinal puncture. Give caffeine sodium benzoate, adrenalin, ephedrine or methedrine to raise the blood pressure.

It would probably be a good rule never to operate on head injuries during the first 12 hours except on those patients giving the classical symptoms of middle meningeal artery hemorrhage.

In the treatment of open wounds of the scalp, skull and brain one guiding principle is the complete eradication of all devitalized tissue and the removal of all imbedded foreign material so far as is possible.

The history of subdural hematoma makes the diagnosis. This is commonly that of a rather hard blow to the head, but usually not one of sufficient force to cause a disturbance of consciousness. There is immediate headache which subsides. After several weeks, headache continues and gradually increases in severity. No objective signs will appear at this time. Later patient becomes somnolent, stuporous, and very suddenly goes into coma. Small trephine openings over the outer convexities of the cerebral hemispheres and evacuation of the clots by irrigation is the only treatment.

Middle meningeal artery hemorrhage is extremely rare. The gradual stripping of the dura from the skull breaks away additional vessels. Intracranial pressure then becomes so great that the patient develops a hemiplegia which is noted in its earliest stage as a weakness in the corner of the mouth and clumsiness of the hand movements. Any patient who has had a lucid interval following a head injury and develops the symptoms above must be operated on immediately. The clot is evacuated and the bleeding vessels controlled either by turning down a small flap in the temporal region or rongeur out a hole in the skull about two inches in diameter. Bleeding points are coagulated.

Subcortical hematoma is most often indicated by increase in the intracranial pressure as shown

by choked discs, headache, vomiting, and hemiparesis if the collection is near the motor area. Treatment is turning down a bone flap and evacuation of the clot.

Fractures through the sinuses, ears or mastoids are compound fractures. When cerebrospinal fluid escapes air replaces it and x-ray pictures may reveal the contrast. Infection may usually be prevented by use of antibiotics. Any cerebrospinal leak which has existed more than one month should have a craniotomy, the brain lifted and the laceration repaired.

The head injury patient with delirium rarely needs surgical therapy. Blood clots, abscess, or injection invariably make the patient somnolent and quiet. Sedation and restraints are the treatment.

Post-traumatic headache is usually due to bruising of the scalp or periosteum of the skull, but if it is persistent and widespread over the cranium, one must suspect subdural hematoma. In many cases close investigation will reveal that the patient had had headaches before his injury and the injury had nothing to do with his discomfort.

So called post-concussion shock or psychoneurosis which continues for months and years in a person who had no evidence of actual brain damage is usually litigation malingering.—F.W.F.

Southwestern Medical and Cancer Conference

A joint meeting of the Southwestern Medical Conference and New Mexico Division of the American Cancer Society will be held at the Hilton Hotel, Albuquerque, New Mexico, November 9-12. Eleven nationally known speakers will present a scientific program, and there will also be exhibits, scientific movies, and entertainment. Reservations should be made to Dr. A. H. Follingstad, care of the Chamber of Commerce, Albuquerque.

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OCTOBER, 1949

No. 10

Ulcerative Colitis: A Medical and Surgical Problem *

Thomas T. Mackie, M.D.**

Winston-Salem, North Carolina

Ulcerative colitis is a potentially progressive, chronic, inflammatory disease which produces permanent and often severe damage to the colon. It is characterized by spontaneous remissions of variable duration. The pathologic process usually begins in the rectum and spreads proximally; less often the initial involvement is proximal in location with subsequent extension distally. Each succeeding period of clinical activity is accompanied by further extension leading to widespread destruction of the mucosa, extensive fibrosis with shortening and narrowing of the colon, polypoid degeneration, and ultimately to involvement of the terminal ileum. Approximately seven per cent of cases terminate with carcinoma which develops in the affected portion of the large intestine.¹

The succeeding cycles of activity and quiescence frequently present protean clinical manifestations in the fields of nutrition, hematology, allergy and the physiology of the gastro-intestinal tract. Surgical complications requiring palliative procedures are common. Radical definitive surgery is often necessary. Successful treatment of severe advanced cases requires the combined judgment of the surgeon and the internist.

The disease has long been considered to be the expression of local infection of the colon. Many investigations have been undertaken to demonstrate a specific infectious agent. While various organisms have been incriminated in the past, proof of a specific infectious etiology is lacking. The report of Hurst² in 1921 that a chronic inflammatory type of colitis was a not infrequent sequel of bacillary dysentery gave impetus to the specific infection theory. The possible importance of the *Shigella* group has subsequently been stressed.³ However the relative infrequency with which members of the dysentery group of bacilli have been recovered and

the uncertain significance of the agglutination reaction in chronic infections do not support the contention that these organisms are usually concerned.^{4,5,6} While a diplo-streptococcus has been stated to be the specific etiologic agent,⁷ this theory likewise has proven unacceptable. Strains have been shown to differ among themselves in important biologic characteristics and to have close immunologic relationships to the enterococci, ubiquitous intestinal organisms of low pathogenicity.⁸ In similar fashion suspicion directed to other agents has lacked confirmation.

Other etiologic mechanisms than infection have had their proponents. Andresen first called attention to the important role of food allergy in certain cases.⁹ The thesis has been advanced that psychogenic factors operating through the autonomic nervous system to produce hyperperistalsis and spasm are the fundamental factors.¹⁰ The demonstration that persistent spasm of the musculature of externalized portions of the colon of experimental animals leads progressively to mucosal congestion, bleeding, and finally to ulceration has been advanced in support of this theory. Although the autonomic nervous system, especially the intrinsic nervous mechanism of the colon, unquestionably plays an important role, proof is lacking that personality defects and autonomic imbalance are primary rather than secondary factors.

More recently an intriguing hypothesis has been advanced by Gill.¹² He postulated that chronic ulcerative colitis is the expression of a deficiency of a protective substance normally present in the mucosa of the small intestine. He reported that administration of dried preparations of the small intestine of the pig was followed by complete remission in a number of the limited group of patients treated. Favorable preliminary results have likewise been reported in this country.¹³ Final evaluation of this thesis is not yet possible. No active principle has

*Presented before the 90th Annual Session, Kansas Medical Society, Topeka, Kansas, May 10, 1949.

**Professor of Preventive Medicine; Director, Institute of Tropical Medicine, Bowman Gray School of Medicine.

been demonstrated. The number of patients treated and the periods of observation are not adequate.

General Mechanism. Our own studies have led us to the concept that chronic ulcerative colitis is the result of a polyvalent mechanism involving the combined action of a number of factors.^{14, 15}

The more important of these appear to be primary and secondary infection; sensitization of the colon to foreign protein; primary and secondary nutritional deficiency states; and secondary physiologic disturbances of the gastro-intestinal tract affecting both secretory and motor function. These conclusions are based upon observations of some 200 cases studied over periods ranging from a number of months to over 10 years.

Infection. The bacteriologic studies have yielded a variety of organisms including the enterococcus, various streptococci, *Salmonella paratyphi* A and B, other unidentified members of the salmonella group, *Shigella paradyseenteriae* and *Shigella sonnei*, and *Proteus morganii*. The evaluation of cultural findings is difficult. Distinction between primary and secondary invaders cannot be made with certainty. Definite proof of pathogenicity for the host is unobtainable and evidence based upon association has little validity. For practical purposes, therefore, one is forced to assume that a species known to be capable of producing an inflammatory reaction in the colon may be of importance in the particular case.

Allergy. The clinical studies have suggested that the inflammatory process in the colon predisposes to the development of local sensitivity to foreign protein. It is an old observation that exacerbation or recurrence of the colitis may occur in the course of an acute upper respiratory infection. Those who have used vaccine therapy have not infrequently had the unhappy experience of observing an acute flare-up of the disease within a few hours following overdosage of an autogenous vaccine. Finally, our studies have amply confirmed the statement that food allergy plays an important role in a significant number of cases.¹⁶

Deficiency. Mixed nutritional deficiency states are usual in the severe cases and may be responsible for fatal outcome.¹⁷ They are the expression of inadequate supplies of certain vitamins, of biologically complete protein, and mineral salts. The associated clinical phenomena show great variation. Such syndromes as pellagra, peripheral neuritis, hypoproteinemia, tetany, hemorrhagic states, and transitory macrocytic anemia are not uncommon.

Physiology. Secondary changes in the physiology of the gastro-intestinal tract develop as the disease progresses. The secretory function of the stomach, the absorption and motor function of the small intestine, and the motor activity of the colon are

altered. Fractional gastric analysis following histamine stimulation reveals anacidity or hypo-acidity in approximately 40 per cent of all cases. Hyperacidity rarely occurs.

Functional changes in the small intestine demonstrable by x-ray appear as the nutritional deficiencies develop.¹⁸ They are indistinguishable from those observed in sprue¹⁹ and are accompanied by defective absorption of the food substrate.

Serial films of the abdomen after oral administration of barium sulphate in water frequently reveal marked delay in the forward progress of the opaque meal through the colon. There is prolonged retention in the cecum and ascending colon accompanied by spasm of the distal portion, and frequent small evacuations consisting principally of blood and mucus. This dissociation of motor function creates the paradox of constipation in the presence of apparent diarrhea.

Discussion. Present evidence indicates that the primary phase of ulcerative colitis is initiated by infection of the mucosa of the colon. This may be produced by a variety of potentially pathogenic organisms. Damage to the mucosal barrier permits secondary infection by other bacteria present in the intestinal contents. The factor of infection, therefore, rapidly becomes complex and maintains the inflammatory reaction irrespective of the presence or absence of the primary invaders.

Sensitization of the colon appears to develop after the onset of the primary pathologic reaction. Fixation of antigenic substances in inflamed tissues has been demonstrated in experimental animals. Subsequent administration of the homologous antigen precipitates an acute local allergic inflammation.^{20, 21} Other experimental work has shown that the colon may properly be classed as a shock organ.²²

Identification of this factor of sensitization is frequently difficult. The studies of food allergy indicate that this mechanism is not constantly operative in the sensitized individual. The natural cycle of ulcerative colitis may be divided into four quadrants representing respectively the stages of active disease; convalescence; quiescence; and early recurrence. Seventy-three per cent of the allergic cases yield evidence of food sensitization in the stage of active disease; 10 per cent in the stage of convalescence; and only three per cent in the quiescent periods. During the early stages of recurrence the percentage rises to 20.

These observations are in accord with the general concept that allergic individuals tend to pass through successive phases of active reaction and relative desensitization. They suggest that the stage of acute recurrence of the colitis is a manifestation of the stage of active reaction and that the onset of

convalescence is an expression of relative desensitization. In the presence of such a mechanism the completeness and duration of remission will depend upon the degree of desensitization and the accuracy of dietary management. If offending foods are not completely and permanently eliminated, resensitization occurs and recurrence of the inflammatory process appears when the stage of active reaction again develops.

Repeated study throughout at least one cycle of the disease may be required to obtain evidence of the existence of this factor. The great majority of patients give no history of allergic manifestations. They seldom suspect idiosyncrasy to particular foods since those commonly of importance in the individual mechanism are usual constituents of the daily diet. Skin tests do not provide dependable evidence. There is no parallelism between reactivity of the skin and sensitization of the colon. The responses to rigid elimination diets provide the only satisfactory evidence. Final evaluation must be based upon predictable changes in the appearance of the mucous membrane of the rectum and recto-sigmoid paralleling the successive withdrawal and addition of suspect foods. Appropriate permanent modification of the diet based upon such evidence is one of the most important therapeutic measures.

The nutritional deficiencies may be primary or secondary. The conventional smooth or "colitis" diets are frequently inadequate to meet the physiologic requirements for protein and vitamins. They may cause a true primary deficiency state. More commonly the deficiencies are secondary or conditioned. These result from incomplete utilization of an apparently adequate diet. In the presence of an established deficiency state the functional changes in the small intestine may lead to a pernicious spiral of progressive malnutrition.

The altered physiology of the stomach and intestinal tract contributes both to the symptomatology and to the progression of the disease. The gastric anacidity may be a factor in the severity of the diarrhea and distention. The motor dissociation of the colon and accompanying spasm augment abdominal pain and bleeding. The exhibition of opium derivatives and antispasmodics tends to increase this dysfunction although they may give some temporary symptomatic relief. The physiologic indications are for mild and continued catharsis preferably with small daily doses of sodium sulphate.

The rational medical management of chronic ulcerative colitis, therefore, depends upon investigation and evaluation of the fundamental factors of infection, sensitization to foreign protein, nutritional deficiencies, and compensation for disturbances of the physiology of the gastro-intestinal tract.

The therapeutic armamentarium is varied. The basic diet should include at least 150 grams of protein, an excess of natural vitamin sources and a restricted content of starches and sugar. The factor of infection may be attacked by the sulfonamides, certain of the antibiotic agents, and by antogenous vaccine. The specific procedures will vary from individual to individual in accordance with the bacteriologic findings.

Evaluation and control of sensitization to food proteins depends upon the response to elimination diets in different quadrants of the natural cycle of the disease. If evidence of food allergy is obtained the particular food must be completely and permanently eliminated. Artificial desensitization cannot be accomplished and spontaneous desensitization is not permanent. Correction of nutritional deficiencies requires a completely balanced diet which provides an excess of the specific food factors. In addition, supplementary supplies particularly of the vitamin B complex and of vitamin A should be provided. Measures to correct the altered physiology of the gastro-intestinal constitute the final imperative medical indication.

When these principles are applied consistently throughout at least one full cycle of the disease, a significant proportion of cases can be controlled. Sixty-seven per cent of our patients have been definitely improved or "apparently arrested"—we hesitate to use the word cured. The latter group, however, is small comprising only 20 per cent of the total.

The indications for recourse to surgery, the time for operative interference and selection of the procedure to be performed may be difficult to decide. This is particularly true of the acute fulminating cases in which the mortality is high under either medical or surgical treatment. Temporary ileostomy is frequently recommended as an emergency or palliative measure to control an ominous immediate situation. Under such conditions it carries a prohibitively high mortality. It must be recognized that once ileostomy has been performed it is no longer possible to conduct the continuing studies of the mechanism of the disease which we have found essential to obtain control by medical means. Furthermore subsequent restoration of continuity of the intestinal tract by ilio-colostomy or ilio-sigmoidostomy is frequently followed by reactivation of the disease often with immediately fatal outcome.

Recently vagotomy has been advocated for the acute fulminating cases.²³ While brilliant results have been reported it is probably too early to attempt final evaluation of this procedure. Our own limited experience has not been a happy one as regards late results. It is questionable whether such per-

manent interference with the integrity of the autonomic nervous system is desirable. The immediate post-operative results of vagotomy in the desperate cases, however, may be dramatic. This suggests that temporary interruption of innervation by vagal crush may provide a life-saving measure without the potentially serious undesirable results of nerve resection.

In the management of the long standing chronic cases with extensive permanent damage to the colon permanent ileostomy must receive very serious consideration. When performed as an elective procedure after adequate pre-operative preparation the mortality rate is not high. It has been our practice to withhold this step until reasonably prolonged medical study has failed to provide the indications for therapy adequate to maintain the individual in reasonable health. Even in those instances in which medical measures alone prove adequate to control the activity and progression of the disease permanent ileostomy must still be kept in mind because of the real hazard of the development of carcinoma in the affected portion of the colon. Recognition of early malignancy in these cases especially in the presence of demonstrable pseudo-polypoid degeneration is impossible. Final decision therefore calls for the exercise of combined skilled judgment by the internist and the surgeon.

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Saddle Block Anesthesia in Obstetrics

Robert L. Newman, M.D.*

Kansas City, Kansas

"Saddle block" is a term used to designate a form of low spinal anesthesia. The term, low spinal anesthesia, usually implies that the areas supplied by the lumbar and sacral spinal roots are anesthetized. In saddle block, however, the lowermost sacral spinal segments, only, are involved and anesthesia is confined exclusively to the saddle area.

Pitkin and McCormack reported on obstetrical spinal anesthesia in 1928; however, it did not attain any particular degree of acceptance until the demonstration by Cleland at McGill University in 1933 showing that afferent impulses enter the cord from the uterine fundus at T11 and T12 and from the cervix, vagina and perineum at S2, 3 and 4. This knowledge was put to practical use by Hingson and Edwards in 1942 when they introduced continuous caudal anesthesia. Adriani and Roman-Vega coined the term "saddle block" to describe this technique which provides anesthesia limited to the saddle area. The technique was adapted to the relief of obstetric pain by Parmley and Adriani in 1946 and has been the subject of several subsequent reports.

The most common drugs in use today for this purpose with their relative potency, according to Adriani, are listed. These potencies are not absolute but roughly as presented. Pontocaine is 10 times as potent as novacaine or metycaine, and nupercaine is twice as potent as pontocaine. Nupercaine is supposed to be more toxic than pontocaine. However, both nupercaine and pontocaine have a much more prolonged action than novocaine, nupercaine having the longer action. Considering these factors and striking a middle course, we decided to use pontocaine in a series of patients, given in a hyperbaric solution. After a few trials we decided upon a dose of 2.5 mgm. in $\frac{1}{2}$ c.c. of 10 per cent glucose. That dosage was used in 206 "spinals" given to 202 patients. The technique was a modification of that described by Adriani and Roman-

Vega. The patient was in a sitting position with the arms dangling between the legs and the head resting on her chest. Using sterile technique, a spinal tap was performed in the usual fashion at the third or fourth lumbar interspace with a small gauge, short bevel, spinal needle. Only as little fluid as possible was allowed to escape—just enough to be certain that the needle was in the spinal canal. The medication was then injected, after mixing the 10 per cent glucose with the crystals of pontocaine, *between uterine contractions* and the patient remained in a sitting position for four minutes. We were particularly anxious that the medication be firmly "fixed" at the lower end of the canal. Thirty to 60 seconds is the time usually recommended for the sitting position.

The patient was then placed on her back with her head slightly raised, by means of a folded pillow—the whole procedure requiring about 10 minutes. Usually within 60 seconds after administration of the drug, the patient began to notice tingling and numbness of the feet, but it required 10 to 15 minutes for complete relief of pain in most cases. Blood pressure and pulse were recorded just before administration of the drug and every 15 minutes thereafter.

No particular effort was made to "select" the cases who received this type of anesthesia, although we did not give it to every case by any means. It seemed foolish to give it to a multipara, for example, already eight cm. dilated on admission to the hospital and progressing very rapidly. We hesitated to give it to patients with toxemia and marked hypertension, although, as we have gained in experience, that has become something less of a contraindication. We did not give it to any patients having a localized infection on their back or to any suspected of having

*Department of Obstetrics and Gynecology, University of Kansas Medical Center.

DRUG EQUIVALENTS (ADRIANI)

Drug	Dose
PONTOCAINE	2.5 mgm
PROCAINE (Novocaine)	25 mgm
METYCAINE	25 mgm
NUPERCAINE	1.25 mgm

Figure 1

RESULTS

Dose	Excellent	Good	Poor
2.5 mgm.	101 (50%)	79 (38%)	26 (12%) (5 Failures) 2.4%
5.0 mgm.	48 (46%)	50 (48%)	7 (6%)

Figure 2

CNS lues. Neither did we insist on giving it to any patient who objected to its use.

The time of administration varied with the patient and her progress—usually around eight cm. dilation in primipara and four to six cm. in multipara. We have given it much earlier than that with good results. However, I am convinced that proper “timing” is of primary importance. Since we were primarily interested in trying to evaluate what one dose would accomplish, there were only four patients that received a second spinal and none more than two. In this dosage there is no particular contraindication to administering the drug more than once other than the increased danger of an added spinal tap. The patients were not tested for sensitivity prior to administration of the drug. No analgesic drugs were used during the first stage of labor except for an occasional dose of morphine used therapeutically. Subsequently, for the purpose of comparison, a 5.0 mgm. dose given under the same conditions was used in 105 patients, none of whom received more than one “spinal.”

The age of the patients in both groups varied from 14 to 41 years with the results as presented. About 50 per cent of patients whether receiving a 2.5 mgm. or 5.0 mgm. dose obtain “excellent” results requiring no additional anesthesia for delivery or repair. Approximately 40 to 45 per cent of patients in each of the two groups obtained a “good” result, requiring some additional anesthesia, usually nitrous oxide, for delivery but in all cases there was perineal anesthesia for any necessary episiotomy and repair. Even when it was necessary to supplement the saddle block, definitely less inhalation anesthesia was required and the baby was not subjected to any insult other than the required amount of inhalation anesthesia. Even if it was necessary to completely put the patient to sleep at delivery, which happened only rarely, it was not necessary to subject her to the additional danger of a second inhalation anesthesia for repair of episiotomy or lacerations.

A “poor” result was listed as one in which the anesthetic either failed or wore off prior to delivery. The improvement in the poor results in the 5.0 mgm. series as compared to the 2.5 mgm. series with

the elimination of the “failures” was probably due to improved technique and timing rather than the increased dosage.

From these results one can say that the anesthetic is satisfactory from the viewpoint of the doctor in 90 per cent to 95 per cent of patients.

The duration of anesthesia definitely affected the result. After the first hour, the proportion of results shifts from the “excellent” to the “good” column. The “poor” results obtained in the first hour might be explainable on the basis that the saddle block was administered too close to the time of delivery in that it did not reach its maximum effect. That does not explain the “poor” results scattered through the different time periods. In some patients the effect of the drug seemed to wear off unusually fast. It would appear that the five mgm. dosage eliminated some of the poor results, although that could be explained on improved technique and experience.

RESULTS				
	Multipara		Primipara	
	2.5mgm.	5.0mgm.	2.5mgm.	5.0mgm.
Excellent	28 (49%)	14 (37%)	71 (48%)	34 (51%)
Good	26 (45%)	22 (58%)	55 (37%)	28 (42%)
Poor	3 (6%)	2 (5%)	23 (15%)	5 (7%)

Figure 4

The results obtained in primipara and multipara with both the 2.5 mgm. and 5.0 mgm. dosage was very similar with perhaps slight improvement of results in primipara with the larger dose. Added experience may be the deciding factor here, also.

There were eight fetal deaths in the total of 310 infants in both series, none of which would seem in any way related to the anesthetic used.

DURATION OF ANESTHESIA						
Time before delivery	Excellent		Good		Poor	
	2.5mgm.	5.0mgm.	2.5mgm.	5.0mgm.	2.5mgm.	5.0mgm.
1 hr.	56	30	17	19	6	0
2 hrs.	35	15	41	19	4	0
3 hrs.	10	3	21	12	16	7

Figure 3

FETAL MORTALITY	
2.5 mgm. = 204 infants = 5 deaths (2.4%)	
1 = 3960 gm. Stillborn = Operative delivery	
2 = 1880 gm. Died 30 min. P.P. = Syphilis	
3 = 3530 gm. Stillborn = Thrombosis Umbilical Cord	
4 = 4320 gm. Stillborn = Syphilis; Operative delivery	
5 = 1040 gm. Died 5 days P.P. = Prematurity	
5.0 mgm. = 106 infants = 3 deaths (2.8%)	
1 = 3040 gm. Died 16 hrs. P.P. = Atelectosis	
2 = 2400 gm. Died 5 days P.P. = Congenital Abnormalities	
3 = 3275 gm. Stillborn = Operative delivery	

Figure 5

In studying these cases there appeared to be only three complications that were of importance or in any way related to the saddle block anesthesia, the incidence of forceps, the frequency of postpartum headaches, and slowing of the progress of labor. From the results in this small series there was no apparent increase in the incidence of forcep deliveries.

Headaches were a bothersome complication; usually they were mild but there were a few which were severe, lasting as long as six weeks. The difference in the incidence of headaches in the 2.5 mgm. and 5.0 mgm. series is probably explained by the fact that most of the 5.0 mgm. patients have been delivered in the cooler months of the years.

COMPLICATIONS			
	Forceps	Headaches	Cessation of Labor
2.5mgm.	15 (7.4%) Primip = 13 Multip = 2	21 (10.3%)	2 (0.8%)
5.0mgm.	8 (7.6%) Primip = 6 Multip = 2	6 (5.7%)	6 (5.7%)

Figure 6

The incidence of headaches definitely increases during the hot summer months.

Cessation or slowing of labor was very difficult to evaluate properly, but there would seem to be a definite increase in the incidence of this complication with the larger drug dosage.

Very few of the patients in either group showed any marked drop in blood pressure. As a matter of fact only one patient out of the 307 had a sufficient drop in blood pressure to produce slowing of the fetal heart rate. That incident occurred in a patient

	202 patients 2.5mgm.	105 patients 5.0mgm.
Diastolic B.P. below 60mm. Hg	6	2
" " " 55mm. Hg	4	0
" " " 50mm. Hg	2	0
Systolic B.P. below 100mm. Hg	5	5
" " " 95mm. Hg	3	1
" " " 90mm. Hg	1	1

Figure 7

who received a dose of 2.5 mgm. It was a transitory phenomenon, promptly relieved with the administration of oxygen, and no discernible bad effects were noted in either the mother or baby.

From these results it would seem that with experience in the use of saddle block anesthesia one can expect satisfactory results in 90 per cent to 95 per cent of patients. In about 50 per cent there will be no necessity of additional anesthesia. The results are improved very slightly, if at all, with the larger dose of the drug and there may be increased incidence of slowing the progress of labor. On the other hand, there does not seem to be increased danger to the mother with the larger dose of the drug. The results, however, would argue in favor of the 2.5 mgm. dose.

The possible dangers and complications in saddle block anesthesia must never be forgotten, but this type of anesthesia would seem to be a definite and valuable adjunct to obstetrical practice.

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Reiter's Syndrome: A Case Report

Robert P. Norris, M.D.*

Wichita, Kansas

Introduction

The clinical syndrome Reiter's disease was described originally by a German physician of that name in 1916. His case concerned a German soldier who presented the triad of urethritis, conjunctivitis, and polyarthritis which followed a minor episode of diarrhea. Reiter reported the isolation of atypical spirochetes from the blood and he considered these the etiologic agent. In recent years there have appeared in the literature, reports of cases of this triad varying from one to 57 in number. Some authors feel that cases of the triad were reported prior to Reiter's case, but these were apparently not recognized as clinical entities. The first case reported in America was described by Bauer and Englem¹ in 1942.

Etiology

As stated, in the original case described by Reiter, an atypical spirochete was reportedly found in the blood; this was considered the causative agent and Reiter suggested the name "Spirochaetosis Arthritica." In the many cases reported since that time, only one investigator (Macfie) has been able to obtain a similar organism. This one was obtained from the urethral discharge of a similar case. Most men agree that the onset and course of the disorder would suggest an infectious etiology with the urogenital tract as the probable site of invasion. The investigators stress the lack of venereal disease in the history in most cases. Gersh and Reich⁴ reported bacteriologic studies which suggested a non-hemolytic staphylococcus albus as the etiologic agent. An inoculation of a guinea pig inguinal gland with this organism was followed by a purulent urethritis which yielded a culture of non-hemolytic staphylococcus albus. Pflieger¹¹ cultured enterococci from the blood stream and bowel of a patient with Reiter's syndrome and considered this organism as the cause. Many varied organisms have been considered as the etiologic agent with no proof of pathogenicity for any of them. Virus etiology has been considered but repeated attempts to discover inclusion bodies from conjunctival scrapings have failed. Allergy has been considered without much support. As reported by Vallee,¹⁴ the most promising bacteriological work has been done by Dienes. He has cultured pleuropneumonia-like organisms from the urethra of a case with arthritis and urethritis. Similar organisms have been found in rats suffering from arthritis and

from the conjunctival sacs of normal mice. They have been cultured from the vagina in women having leukorrhea and from the urethra of males with a "non-specific" urethritis. The organism is quite pleomorphic; in one form it is said to be filtered like a virus and in another form it may have an intracellular parasitic existence. More recently Young and McEwen¹⁵ reported seven cases of bacillary dysentery that subsequently developed the complete Reiter's syndrome. Four of six cases tested showed positive agglutinations for Shigella organisms. In their opinion, Reiter's syndrome is a particular combination of the recognized complications of bacillary dysentery; namely, arthritis, urethritis and conjunctivitis. In support of this latter view is a report of Florman and Goldstein, who report the observation of a four-year old boy with the typical triad of Reiter's syndrome and who showed a positive Shigella titer of 1:1280 during the illness and gradual decrease to 1:40 as the illness subsided. So we see, as in many disorders of unknown etiology, many possible agents are given support by various investigators.

Clinical Picture

In consideration of the clinical picture, the disease is usually seen in young men in their early twenties. As mentioned above, Florman and Goldstein³ report the triad appearing in a four-year old boy. Most cases will show urethritis as the initial symptom. This will start with burning on urination followed soon by frank purulent white discharge from the urethra. Usually the triad of urethritis, conjunctivitis, and arthritis will be complete within the first week of the illness. The disease may start with any of the three main parts of the triad as the initial symptom. Several cases, including Reiter's original case, have started with diarrhea as the initial finding. When diarrhea is present, it is usually mild. The course from onset to complete recovery is less than two to three months. The arthritis is rather persistent and is reported as lasting from two to four months. In outward appearance the joint involvement may resemble acute rheumatoid arthritis rather closely; there is periarticular swelling and redness. There is exquisite pain in passive motion and the patient will avoid motion during this stage as much as possible. This of course, favors muscle atrophy due to disuse. The conjunctivitis and urethritis are usually transient, lasting a few days to one or two weeks. The conjunctivitis may be rather severe, but usually there are no permanent visual defects. The

*From the Medical Dept., The Wichita Clinic, Wichita, Kansas.

urethritis usually causes redness and edema at the urethral meatus and lesions are commonly seen on the glans which resemble the skin lesions in cases showing keratoderma blenorrhagica.

It is uncommon to see any complication or permanent deformity resulting from the arthritis and according to the literature, nearly all progress to complete recovery. Holander⁷ reported 53 cases which showed some clinical variation; 32 of these had the typical Reiter's syndrome with the complete triad, but the other 21 had only urethritis and arthritis. These latter cases were comparable in all other respects. For this reason, Hollander feels that they are doubtless the same disorder and proposes the name "infectious urarthritis" to include both varieties. Six of Hollander's cases showed keratoderma blenorrhagica without gonorrhea, as did the case in this report. This skin disorder usually clears within two months.

Any of the symptoms, especially the arthritis, may recur. Cases are described with recurrent conjunctivitis as the only symptom till after several months, the typical triad appeared. This was seen in the case reported by Vallee¹⁴ in which the patient had recurrent episodes of the triad over an eight-year period, but at times in the interim he would complain only of mild conjunctivitis. Enlargement of lymph nodes and the spleen have been described, as has pleuritis.

Laboratory Studies

Study of the urine will reveal many pus clumps, occasional red blood cells, and traces of albumin, but usually no casts. The kidneys show normal power for concentration. The urine cultures reveal enterococci in some cases. The blood frequently shows a secondary hypochromic anemia. The white blood count may be normal or elevated as high as 20,000 to 25,000. Culture of synovial fluid from involved joints fails to reveal the causative agent. There are only inflammatory cellular elements in this fluid. As mentioned, conjunctival scrapings have failed to reveal the presence of inclusion bodies. Agglutination for *Brucella* organisms is negative. Agglutination for dysentery organisms has been reported positive.^{3, 15} Complement fixation for *Neisseria* gonorrhea is consistently negative. The blood Wassermann is negative. The erythrocyte sedimentation rate is increased. Smears of the urethral discharge reveal gram-positive cocci in groups in many cases. These were described by Gersh and Reich⁴ and were identified as non-hemolytic staphylococcus albus. Diphtheroids were also found in their cultures.

Diagnosis

The appearance of the triad of conjunctivitis, urethritis, and arthritis should arouse one's suspicions that he may be confronted with a case of this syn-

drome. Absence of a venereal history and failure to demonstrate gonorrheal origin should strengthen these suspicions. The diagnosis is one of exclusion. Gonorrheal arthritis must be considered; chills and fever are commonly associated with gonorrheal arthritis and may be useful in differentiating that disorder. The similarity of the joint manifestations to those seen in rheumatoid arthritis make differentiation from that condition important. The duration of arthritis in Reiter's syndrome is usually short lived and this serves as an aid in differentiation. Also, some authors cite the failure of Reiter's syndrome arthritis to respond to salicylates for pain relief as another differentiating factor. Other authors feel that the salicylates are effective in both conditions.

The urethritis may appear outwardly like that of gonorrheal origin so smears and cultures are used for exclusion of Neisserian infection. A case of purulent urethral discharge with negative smears and cultures for gonococci should be considered as supporting this diagnosis; usually by the time the cultures are reported, the patient will have developed the entire triad if he is going to do so. By and large, if common causes of the separate portions of the triad are ruled out, the diagnosis is established.

Treatment

As in most disorders of unknown or uncertain etiology, the treatment of this disorder is largely palliative and results are as unpredictable as the cause. Numerous remedies have been used with almost uniformly disappointing results. Penicillin has been used, but is of no specific help. Sulfonamides have been used with no apparent results. In fact, it has been stated by Hollander⁶ that if a case that is suspected of being Reiter's disease responds to chemo-therapy, it is most likely not Reiter's disease.

Bed rest is necessary during the acute articular manifestations, but should not be prolonged as muscle atrophy may become severe due to disuse. Certain authors feel that the bed rest is the best form of therapy available at the present time. Good nutrition must be maintained and adequate vitamin intake is felt to be essential. Heat to the affected joints may give some relief. Foreign protein fever therapy has been used with variable results. In Europe "Arthigon" has been used for this purpose. Typhoid vaccine has been used in the United States with good results in some cases.

For the arthritis, salicylates are used with variable results. Hollander⁶ states that salicylates in doses up to eight or ten grams daily are helpful in controlling the joint pains. Rosenblum¹³ feels that a combination of codeine and acetylsalicylic acid is the most helpful as an analgesic. Hartman⁵ reports

the use of x-radiation in one case with "improvement."

Gold therapy is reportedly of no value and, as is known, may be hazardous, even when given conservatively.

Symptomatic therapy is used for the ocular and urethral manifestations.

Antispasmodics are helpful in relieving the pains in the lower urinary tract. Alkalinizing the urine may also be helpful. Boric acid packs and bland ointment for the eyes may relieve the eye symptoms somewhat. Sulfacetamide (30 per cent) eye drops are recommended and were quite helpful in our case.

Case Presentation

The case under discussion is that of a 20-year old white male who is unmarried and who was occupied at farming. His past history included affliction with measles, whooping cough, and chicken pox with no known complications. He had not had scarlet fever, diphtheria, rheumatism or known venereal disease. He had not served in the armed forces, being disqualified due to an infected pilonidal sinus. There had been some mention at one Army examination that there was "something wrong" with his heart or lungs, but subsequent examination of these organs was reported as normal.

In January, 1946, he had the pilonidal sinus removed. Immediately following this, he developed pain and swelling of the left heel and foot before he left the hospital. He was given some "x-ray therapy" and the foot symptoms improved. He also developed "sinus trouble" but this was not incapacitating and he returned to his work. One year later in January, 1947, he began to note some ease of fatigue. In looking back, he says that he had an occasional mildly painful joint in one of the extremities, shoulders or hips, but they were not swollen and were of short duration; there was not enough pain to dictate the need for medical attention. About October 13, 1947, the patient developed a mid-lumbar backache and at about the same time he noted a marked burning on urination. Soon there followed a frankly purulent urethral discharge. His last sex contact had been mid July, 1947, about three months prior to the onset of this illness. There were no gastro-intestinal symptoms. The following day he observed that there was some redness and irritation of the eyes and he assumed that this was some form of "pink eye." After another day, he developed painful swelling of the feet and ankles. This was soon followed by pain and swelling in the right knee. Next, the right hip and shoulder were involved in the painful process. There was marked limitation of motion. The triad of arthritis, conjunctivitis, and urethritis all developed in a matter

of two or three days. He was seen by his local doctor who gave him a "shot" but his symptoms progressed and he was sent to his local hospital.

Treatment at his local hospital included pantopon hypos for pain and both oral and parenteral salicylates. After two or three days he developed mental confusion and mild hallucinations, and he was admitted to Wesley Hospital, Wichita, Kansas, on October 21, 1947, on the psychiatric service. His mental confusion cleared rapidly and did not recur.

About ten days after admission here, a red spot was noted on the left great toe. The following day he had round red spots all over the extremities and the scalp which developed subsequently into the dermatitis described below. An ophthalmologist's consultation was obtained for the conjunctivitis; clinical impression at first was a conjunctivitis due to gonococcus or meningococcus, but because of the presence of the triad of conjunctivitis, urethritis, and arthritis, the diagnosis of Reiter's syndrome was suggested. The conjunctivitis and urethritis improved promptly and dramatically under the treatment described below, but the arthritis and dermatitis persisted rather stubbornly. He continued to have daily temperatures of 100-101°. His treatment included eight days of penicillin parenterally, 50,000 units every three hours with no apparent improvement in the arthritis or dermatitis.

On November 21, 1947, medical consultation was called for. At this time he had many skin lesions involving the head, extremities, and the glans of the penis. The lesions of the skin consisted mostly of round, slightly raised lesions, about 1-2 cm. in diameter with bright red circumference and a tan, scaling center. The lesions on the penis showed rather thick encrustation. There was a slight purulent urethral discharge and some irritation about the meatus. The lesions involved the palms of the hands and the soles of the feet with a marked tendency to hyperkeratosis. The over-all picture was typical of the condition, Keratosis blenorragica. The heart, lungs, and abdomen were normal to physical examination. The joint involvement at this time included swelling, redness, and limited motion of both ankles, knees, the left third finger, both shoulders, the right temporo-mandibular joint, and the cervical spine. Clinically the arthritis was similar to an acute rheumatoid arthritis. Subsequent clinical course and laboratory data support the diagnosis of Reiter's syndrome, largely as a diagnosis of exclusion.

Laboratory work included the following findings: urinalysis revealed numerous pus cells and occasional clumps of pus cells; this subsequently cleared entirely. The red blood count has varied from 3.7 to 4.30 with hemoglobin from 70-80%. The leukocyte

count has varied from 6,800 to 16,850 with a tendency to average about 11,000. Repeated blood cultures were negative. Cultures from the eye discharge at a time when it was still purulent, revealed no growth from the left eye, and a culture of staphylococci from the right. Further attempt at identification of the organism unfortunately was not done. Cultures from the skin lesions were negative. Cultures from the urethral discharge revealed staphylococci only; there were no gonococci on several cultures. Blood Wassermann and Kahn tests were negative. Complement fixation for *Neisseria gonorrhea* was negative. Malta fever agglutination was negative. Repeats on these agglutination tests were done with the same results. Since this case was observed, reports appeared in the literature regarding the relation of *Shigella* organisms to this syndrome. *Shigella* agglutinations were not done on this case. Sedimentation rate was rapid and remained so for many months. Non-protein nitrogen was within normal limits.

The patient remained in the hospital until March 2, 1949 (16 months). The skin lesions, as mentioned, rather promptly cleared with the exception of the keratotic areas on the hands and feet. These sloughed considerably and remained keratotic for several months and gradually cleared up completely. He developed some infection or necrosis involving the nail beds of all fingers and toes. There was a caseous material expressed from beneath the nails and they showed a tendency to become detached. These changes have been described in hyperkeratotic disorders. The cultures of this material from the nails showed no organism. The conjunctivitis and urethritis cleared promptly at the onset of treatment. On January 2, 1948, the patient complained of burning and redness of the eyes, and he developed a recurrence of the purulent conjunctivitis. This again cleared under the use of sulfacetamide 30% eye drops. The conjunctivitis recurred once or twice after this and at one time the patient developed a plastic iritis superimposed on the conjunctivitis. This completely cleared up with no impairment of the patient's vision. There has been no recurrence of the urethritis at any time. The arthritis persisted and remained rather severe. It centered in various joints as mentioned, tending to migrate slowly. There was moderate periarticular swelling and severe pain so that motion was very limited due to pain. There was some disuse atrophy of his arm and leg muscles. There developed a contraction deformity of the left third and fourth fingers and these contractions remain. The pain was so severe most of the time that even passive motion of mild degree was painful, at times excruciating.

The red blood count remained above 4,000,000

cells per cu. mm. through most of the illness. The blood proteins remained within normal limits. The white blood count was slightly elevated and had from 80-90% polymorphonuclear leukocytes during most of his hospital stay. There was no tendency to an eosinophilia.

X-rays of the involved joints at the height of joint involvement, showed no bone changes, but some soft tissue periarticular swelling. X-rays subsequently taken of the knees and ankles showed a marked degree of demineralization. The extremity joints continued to have the clinical appearance of a severe rheumatoid arthritis and were very slow to subside. It has been stated in the literature that the arthritis may last up to four months. This patient's arthritis continued at least in a deformity stage for a period of 16 months and remains present to some extent at this time. Gradually the patient was able to exercise his arm and chest muscles through the use of an overhead bar and these muscles showed apparent return toward physiological normal size.

In April, 1948, while the patient was being turned to bathe his back, he complained of pain in the neck and the following day when seen by the attending physician, he had rotation of the head to the left side. There was painful spasm of the right sternomastoid muscle and this was considered a soft tissue component of the over-all clinical picture. He had had at times, severe pain in the neck on motion which was assumed to be due to cervical spine involvement in the arthritic process. He was treated conservatively as regards the neck. There was no improvement. Neck traction was applied by means of a chin strap, but this proved so painful that it was discontinued. It was over six weeks after this "wry-neck" began that bony pathology was entertained. A lateral view of the cervical spine revealed anterior subluxation of the first cervical segment on the second. Orthopedic consultation was obtained and skull traction by means of a Crutchfield "ice tong" apparatus was applied. Weight on this traction was gradually increased until 25 pounds were in place. There was only partial reduction after seven weeks traction, so this was removed. The neck remained in the dislocated position and at the present time appears ankylosed in a slightly left rotated position. The knees remain swollen and there is much pain on passive motion. The range of motion is about 160° to 180°, but there has been gradual improvement.

Treatment included salicylates in doses from 20-40 grains daily, and the patient seemed subjectively relieved, but he was not comfortable without other forms of pain relief. He was given four typhoid vaccine fever reactions with no appreciable effect on the joints. Physostigmine and atropine were

given by hypodermic with slight, if any, relief of pain. He received adequate oral and parenteral vitamin therapy. His dietary intake was good except for the first few weeks when his temporomandibular joints were involved in the arthritis and prevented chewing. Mapharsen 0.06 gm. was given each week for eight weeks without apparent benefit. Colloidal gold was given each week for eight weeks without apparent effect on the arthritis. Para-aminobenzoic acid in doses of 0.5 gram four times daily was utilized for several weeks with no apparent benefit. As already mentioned, he received a course of penicillin intramuscularly. Also, he received streptomycin and sulfadiazine courses without appreciable effect on the arthritis. The patient has required codeine up to one grain by hypodermic for relief of pain. Demerol in doses of 75-100 mgs. was also used for the pain. X-ray deep therapy was applied to the right shoulder and both knees in dosage of 300r units. Deep therapy was also given to both ankles, the right elbow, the left shoulder, and left hand. The patient suffered such exquisite pain on being moved about for his x-ray therapy that this was discontinued. There was no apparent benefit derived from this amount of x-ray.

Summary

A case of the syndrome described as Reiter's disease is presented because of the unusual severity of the arthritis component and because of the complication of subluxation of the cervical spine. The case presents the typical triad of arthritis, conjunctivitis, and urethritis, all of which made their appearance in a period of three days. The appearance of the

initial symptoms was not associated with any diarrheal episode. There was an associated hyperkeratotic dermatitis typical of keratosis blenorrhagica. The conjunctivitis showed a tendency to recur, but responded readily each time to treatment with sulfacetamide eye drops. The arthritis was very resistant to all forms of treatment and moderate deformity persists in some joints at this writing, 16 months following the onset of the disorder.

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Principles of Early Management of Hand Injuries

Prepared by Regional Fracture Committee

American College of Surgeons

Protection of the Hand

Following injury, the hand is particularly susceptible to the development of complications leading to serious disabilities. For this reason it is important that the freshly injured hand be given the most careful protection against such complications as result from added infection, additional tissue damage and stiffening.

The principles governing the provision of this protection may be briefly stated as follows:

1. *Protection against added infection.* Any open accidental wound of the hand may be assumed to be contaminated. It is important that no additional infection be added. This requires:

a. Protection of the wound at once with a sterile dressing.

b. Avoidance of putting anything into the wound, such as instruments, gauze, applicators, sponges or any sort of antiseptic.

c. If any cleansing of the areas around the covered wound is done, it should be with soap and water only.

d. Avoidance of all efforts at treatment of the wound by exploration, debridement or repair of damaged structures until adequate facilities are available. Adequate facilities for this purpose should include a location where surgically aseptic technic is employed, adequate anesthesia, proper instruments, sufficient assistance, good lighting and the provision of a bloodless operative field.

e. Application of a sterile dressing which will protect against the entrance of foreign material. Such a dressing should be voluminous, firmly applied with moderate pressure, separating the fingers from each other, and should maintain the hand and fingers in the position of function.

f. Antibiotic drugs should be administered systemically, not locally, in full dosage. Tetanus antitoxin (or toxoid) should be administered when the conditions warrant.

2. *Protection against added tissue damage and deformity.* Immobilization of the hand is required in any major injury, whether the wound involves skin, tendons, nerves, joints or bones. Immobilization should be governed by the following principles:

a. Immobilization should be employed as soon as possible after receipt of the injury for protection from further tissue damage.

b. Following definitive treatment of the injury, the immobilization should be continued as long as may be required for healing to occur.

c. Immobilization should be in the position of function (position of grasp) in order to maintain optimum relation of bone fragments and of soft tissue structures.

d. The position of function in immobilization is necessary to prevent disabling deformities, contractures, muscle weakness and joint stiffening, and to insure the earliest return of usefulness after healing.

e. Flat splinting of the hand or any of its digits must be avoided at all times.

Requirements of Early Definitive Treatment

I. The first aid treatment of hand injuries is directed fundamentally at protection. It should provide protection from infection, from added injury, and from future disability and deformity. This protection is afforded by noninterference with the wound, cleanliness of surrounding areas, the application of sterile protective dressings and immobilization in the position of function.

II. The general requirements for proper early definitive care are:

a. Thorough evaluation of the injury.

1. Determination of the time, place, causative agent and mechanism of the injury.

2. Determination of the nature and extent of the first treatment given.

3. Determination of infection status; whether the wound is relatively clean, grossly contaminated or with infection established.

4. General nature of the wound; i.e., contusion, abrasion, burn, incised wound, lacerated wound, crushing wound, puncture wound, tooth wound, imbedded foreign body, fracture, compound fracture, amputation or combined injuries.

5. Evaluation of structural damage.

(a) Degree and extent of surface injury.

(b) Source of major bleeding.

(c) Evidence of tendon or muscle damage by testing function *against resistance*.

(d) Evidence of nerve injury elicited by testing for motor and *sensory* functions.

(e) Bone and joint injury determined by x-ray.

(f) Discovery and exact localization by x-ray of suspected opaque foreign bodies.

b. Adequate facilities and equipment.

1. Each hospital or clinic should have at least one surgeon who is thoroughly familiar with the anatomy and physiology of the hand

and who is prepared to undertake the early treatment of its major injuries.

2. Such treatment should be rendered under strictly aseptic conditions, preferably in an operating room, with careful adherence to aseptic technic in the matter of scrubbing, draping, masking and the use of gloves.

3. An adequate supply of appropriate instruments.

4. Sufficient assistance to assure good exposure.

5. Good lighting.

6. Provision of a bloodless field by means of pneumatic tourniquet or blood pressure cuff.

7. Complete anesthesia for the patient, preferably by general anesthetic.

c. Application of appropriate treatment.

1. Thorough cleansing of a wide area around the wound with the wound protected (entire hand and forearm). Shaving, soap and water scrub.

2. Thorough cleansing of the immediate wound area, preferably with soap and water or a bland detergent. Antiseptics should not be used in or on the wound.

3. Careful inspection of the wound and assurance of adequate exposure, by additional incision if necessary, *closely paralleling natural creases*.

4. Thorough toilet of the wound, removing, under inspection, all foreign matter. Excision, by sharp and careful dissection, of all completely devitalized or grossly soiled tissue in the wound surfaces. It is essential that the greatest care be exercised to spare all tissues that may be viable, particularly skin, tendon, nerve and bone fragments.

5. Assurance of hemostasis by ligation of major injured vessels.

6. Repair of injured nerves by end-to-end union with fine interrupted perineural sutures. The uniting of divided digital nerves is important to future function.

7. Repair of other soft tissue injuries, where appropriate; i.e., in clean wounds of short duration, in well-cleaned contaminated wounds of not over eight hours' duration, never in wounds with established infection.

8. Reduction of fractures and dislocations, and retention in corrected position by traction or splinting in the position of function (position of grasp with wrist in dorsiflexion).

9. Application of protective dressing, fingers separated by gauze and hand immobilized to such extent as may be necessary to permit heal-

ing, in the position of function (never in the flat position).

10. Administration of antibiotics and protective antitoxin as indicated.

d. After-treatment.

1. Elevation and rest of the hand.

2. Noninterference with initial dressing for a sufficient time to permit healing, unless evidences of supuration develop.

3. Restoration of skin coverage of denuded areas at earliest possible time. Partial thickness skin grafting is a simple and valuable means of promoting early healing.

4. Early restoration of function for non-affected parts of the hand by directed *active* motion to the fullest extent that will not jeopardize healing of repaired structures.

5. Restoration of function in affected parts of the hand by directed *active* motion as early as is consistent with full healing and preservation of the repair of damaged structures.

Surface Injuries

I. The first-aid care of wounds of the hand is directed fundamentally at protection. It should provide protection from infection, from added injury and from future disability and deformity. The best first-aid management consists in the application of a sterile protective dressing, a firm compression bandage and immobilization by splinting in the position of function.* No attempt should be made to examine, cleanse, or treat the wound until operating room facilities are available.

II. Early definitive care requires thorough evaluation of the injury with respect to its cause, time of occurrence, status as regards infection, nature of first-aid treatment and appraisal of structural damage. For undertaking the definitive treatment the conditions required are a well-equipped operating room, good lighting, adequate instruments, sufficient assistance, complete anesthesia and a bloodless field. The treatment itself consists of aseptic cleansing of the wound, removal of devitalized tissue and foreign material (exercising strict conservation of all viable tissue), complete hemostasis, and the repair of injured structures, to be followed by protective dressing to maintain the optimum position. After-treatment consists of protection, rest and elevation during healing, and early restoration of function by directed active motion.

Burns, abrasions and avulsions may cause destruction and denudation of any area of the skin of the hand. The care of such injuries has three major objectives:

1. Protection from infection.

*Position of function or position of grasp: wrist hyperextended in cock-up position; fingers in mid-flexion and separated; thumb abducted and in mid-flexion, with tip pointing toward little finger.

2. Early restoration of skin covering.

3. Avoidance of disabling scarring and contractures.

These objectives are sought in the various stages of treatment.

1. *First-aid treatment*

(a) Chemical burns.—Remove chemical by profuse irrigation with water, preferably warm.

(b) Heat burns, abrasions and chemical burns (after washing away the injuring agent).—Apply sterile dressing completely to cover the hand and bandage firmly.

2. *Definitive treatment*.—This should be carried on in operating room under conditions of strict asepsis (draping of field, sterile gloves, masking of operator and attendants).

(a) Gentle removal of first-aid dressing, soaking loose with normal saline solution if necessary.

(b) Gentle cleansing of injured surface by light sponging with saline on cotton balls. If surface is dirty or greasy, it may be gently cleansed with sterile neutral soap in sterile water or bland detergent. Loose fragments and tags of skin are removed. Blisters are not opened.

(c) Sterile strips of fine-mesh vaseline-impregnated gauze are smoothly applied to the injured surface. These are covered with dry sterile gauze, gauze being placed between adjacent fingers. The whole hand is covered with a thick layer of sterile mechanic's waste or fluff gauze, and splinted in the position of function. Elastic knit bandage is applied over all, including all fingers, with firm even pressure. The hand is kept elevated.

3. *Subsequent dressings*.—The original dressing is left undisturbed for 12-14 days unless elevation of temperature suggests active infection requiring inspection. The second, and all subsequent dressings until healing, are done under completely aseptic conditions (as described above). Preparations for skin grafting should be made in advance.

(a) The dressing is removed. Slough and debris are washed away by irrigation with normal saline solution (no scrubbing of surface).

(b) Granulating areas from which slough has separated should be covered with thin split-thickness skin grafts.

(c) Dressing, similar to that employed at first definitive treatment, is applied. Hand is splinted in position of function.

(d) Further dressings, similarly conducted, are done at intervals of seven days until epithelization of burned surface is complete. Skin coverage by grafting should be secured as rapidly as possible, as the best assurance against infection, inflammation, infiltration, scarring and contractures. This early coverage by "skin dressing" is of the greatest importance, even when epithelization from the margins is proceeding satisfactorily. Split-thickness grafts are best for this purpose, even though it is anticipated that some of grafted area must later be removed for replacement by more suitable skin.

4. *Restoration of function*.—As soon as epithelization of burned surfaces is complete, directed active use and exercise of the hand is begun. Normal use of the hand is encouraged and voluntary exercise and appropriate occupational therapy prescribed.

CHILD WELFARE PAGE

Cerebral Anoxia in Infants and Young Children
A factor in the development of behavior disturbances.

Within recent years a fairly clear picture has developed of the late effects of anoxic brain injury in children. The often distasteful neurological consequences of such damage are well known. Only within the past few years, however, has it been recognized that in the absence of any obvious neurologic defect, psychologic sequelae may be just as important and even more crippling.

Anoxia is a frequent cause of brain injury in children, and may be the underlying cause in many cases of apparently different etiology. In pure form it is best exemplified by a newborn infant whose respiratory mechanism has suffered a series of insults: labor trauma, sedative drugs, anesthetic agents, and perhaps intracranial hemorrhage. The same type of injury may be received by infants who contract pertussis, and possibly by children of all ages who develop edema of the brain from infectious or toxic agents, or from trauma.

The clinical picture that follows is most commonly that type of disturbance called post-encephalitic. The common denominator is *poor emotional control*; moods change quickly and to extremes, with a pronounced tendency towards anger, cruelty, and destructiveness. *Hyperactivity* is prominent; these children move, shift, wriggle, touch, and handle objects throughout their waking moments, so that it exhausts an adult to watch them. Behaviour is *impulsive*, with little consideration of the consequences of actions. The intelligence may be normal or superior, but cannot be properly used because of a *short attention span*, easy distractibility, and a *capricious and unreliable memory*. They have particular trouble with arithmetic in school.

Such children are uncomfortable to have around, and often exceedingly unattractive. They have, unfortunately, a great need for liking, affection, and acceptance. If a measure of love is not granted, their anti-social and destructive tendencies are confirmed and strengthened into life-long patterns.

It is convenient (though not entirely correct) to consider that the highest levels of the CNS have been functionally injured. The controlling centers and association tracts of the frontal lobes are the latest acquisitions of the human brain, highly susceptible to injury and the structures principally concerned in the development of acceptable social behavior. Because these levels are non-functional in the young infant, it follows that major destruction can take place without any signs or symptoms at the time.

And because functional brain injuries in small children tend to be partially repaired in time, they should be treated with the kindness and understanding due any severe physical handicap. With such handling, improvement to the level of "normal" has been reported.

CANCER PAGE

Gastric Ulcer and Cancer of the Stomach

The term "peptic ulcer" has long been used to designate ulcers of both the stomach and the duodenum, but it is important that we remember that there is a great deal of difference between the two lesions. Duodenal ulcers have no relationship to cancer. However, there is a distinct concern about cancer in patients who have gastric ulcer. There is a disagreement whether benign ulcers undergo malignant change, or whether those which prove to be cancers were malignant all the time—the ulcerating carcinomata. That difference of opinion, which will probably continue for some time to come, need not concern us too much if we remember that there is always the problem of determining whether a given ulcer is malignant or benign.

Reports from the best clinics in the country tell us that there is an appreciable percentage of error in making a differential diagnosis between benign ulcer and a carcinoma of the stomach by radiological study, by gastroscopic examination, by palpation in exploratory operations, and even with the stomach removed, opened, and in the hands of the examining surgeon or pathologist. On this point there is agreement, and we must consider the possibility of malignant disease in any patient who presents himself with a gastric ulcer—particularly if he is above the age of 40.

What is the proper treatment for gastric ulcer? Some good surgeons go so far as to say that all gastric ulcers should be removed by partial gastrectomy because of the danger of cancer—whether it is primarily so or might develop from the benign lesion is of less significance than realization that a cancer might be there. Other equally qualified surgeons modify this recommendation by accepting a trial period of approximately three weeks, during which the effect of careful medical management may be observed. If, during this period there is not both relief of symptoms and complete healing of the ulcer as shown by x-ray examination or gastroscopic observation, then gastrectomy should be done. Relief of symptoms alone is not enough, for a malignant ulcer can cause pain identical with that of a benign one, and that pain will be relieved by good medical treatment the same as from a benign ulcer. One may be lulled into a false sense of security if he judges by clinical response alone. Healing must be demonstrated to justify further medical treatment.

The percentage of cures of carcinoma of the stomach is distressingly low, but it is significant that a sizable portion of those cured by operation are patients who had a gastric ulcer (supposedly benign) in which there was malignant tumor—usually unsuspected until the microscopic examination of the tissue was made. Here, then, is a group of patients in whom cures of gastric cancer can be expected because they are seen and treated early, in the course of the disease.

Be suspicious of every ulcer, particularly if the patient is over 40 years of age. If a gastric ulcer does not completely heal with about three weeks of good medical management, gastrectomy is advisable. In these carcinomata, thus detected and removed in an early stage, we can obtain a good percentage of cures. It is one of the most hopeful aspects of improvement of our statistics of curability of cancer of the stomach.

PRESIDENT'S PAGE

Dear Doctor:

What the public thinks of an individual or an organization is of utmost importance to them. Influencing this opinion is public relations, and public relations has now matured into a relatively exact science. It is the science of creating good will, of causing the public to approve of what you are, of what you do, and of what you sell.

Public relations is currently occupying a large share of attention in the activities of industry and government. The professions are beginning to recognize its importance. The medical profession, with utmost confidence in the value of its product, has begun to tell the people about this. The American Medical Association is engaged in a nation-wide educational program. Many state societies are devoting a large part of their effort in this direction.

So is Kansas. The Kansas Plan is an example of sound public relations. It represents a health program that has been accepted by the public. There are, however, many other areas in which our public relations can be improved, and your society is now developing an overall public relations program.

On October 2 some 200 physicians and their wives, officers of state or county medical societies, met in Wichita to hear Mr. John B. Hughes of Colby, radio executive; Mr. Alexis McKinney, Denver, newspaper publisher; Mr. Harvey Sethman, Denver, medical society executive; Mr. Clem Whitaker and Miss Leone Baxter, Chicago, directors of the A.M.A. educational campaign, talk of these things. Your officers will report this meeting to your county society. It is our sincere hope that each county in Kansas will develop its own program of public information, public service if you please, toward the end that the people of this state may be given a more complete understanding of what the medical profession has to offer them. The magnitude of this undertaking, its importance to you as an individual physician, must be immediately apparent. We hope to have the active cooperation of each member because your help is essential to the success of our venture.

Sincerely,

Haddon Peck, M.D.

EDITORIAL COMMENT

Nursing Education

The new Nurses' Act passed during the last session of the legislature introduced certain changes that will shortly be of increasing interest to the physicians of this state. They are designed to standardize the system of nurse education, to provide better training for the registered and the practical nurse, and to give a high standard nursing service to the people.

One of these changes is the licensing of a practical nurse. This will be possible in Kansas for the first time shortly after the beginning of next year. Qualifications include requirements that the practical nurse must be 18 years of age or more, a citizen, of good moral character, with at least two years of high school or its equivalent if she is under 25 years of age but not less than an eighth grade school education if she is older. Eventually it will be required that the licensed practical nurse complete a prescribed curriculum in a school of practical nursing accredited by the Board. Until such schools have been established within Kansas, that qualification may be waived upon the presentation of satisfactory proof of practical experience. For her effort, if successful, she will obtain a license from the Board and will be permitted to use the letters L.P.N.—Licensed Practical Nurse—after her name.

For the time being this is optional, but the Nurses' Board is trying to interest all practical nurses in taking the examination. They will welcome the cooperation of the medical profession in this regard. The Nurses' Board is also cooperating to make it possible for practical nurses to pass the examination, by offering to hold schools at any location where eight or more practical nurses indicate their interest. This course will run twice a week in 21 three-hour sessions consisting of lectures, recitations, demonstrations and practice periods. There will be no tuition but a fee of ten dollars is required to cover the cost of materials that will be used. The nurses believe any practical nurse completing this course will have little difficulty in passing the examination for a license.

Still in the planning stage but a definite possibility in the future will be drastic changes in nurse education. Nurse education today is comparable to medical education of a half century ago, where scores of unregulated schools sprang up all over the country to give degrees in medicine with little regard for the quality of training that was presented. With the revolution in medical education, most of the schools were closed but those that remained of-

fered a standardized course. As a result, the doctor was far better equipped to assume his responsibility and the standard of the practice of medicine was elevated.

Today the nurses are talking about this. They think that they too should unify their training requirements. In Kansas they hope to follow the minimum standards set by the national accrediting board which says that the nursing school must have no less than 50 students. It is their belief that schools should be removed from hospitals and be placed under the supervision of educational institutions. Hospitals may then contract with the schools of nursing for student nurses on a broader base but comparable to the system of internships in medicine.

At least several members of the Nurses' Board in Kansas are of the opinion that there should not be more than 12 schools of nursing in this state. They expressed the belief that an equal number of nurses can be trained according to the new system but that their education will be infinitely superior. They expressed confidence in the ultimate adoption of this program. They believe the nurses will like it, they think the public will like it, and they are most hopeful that it will meet with the approval of the medical profession because they are, after all, following in the doctors' footsteps in making such a proposal.

This change in the training of nurses is still far from becoming reality. However, the medical profession should begin thinking about its effects, what it will mean to hospital nursing services and to the public in general. If such a change presents problems, those might be investigated at the present time to enable their solution before the need arises. The Journal will appreciate comments on this proposal from the membership.

Medical Study Clubs

Those who have enjoyed the abstracts from current medical literature appearing in the Journal during the past year or more will be interested to learn that they are contributed by the Emporia Study Club. Thirteen years ago a small group of physicians in Emporia organized this group which has been in existence and functioning continually since that time, except for an interlude during the war. At present a second study club is being organized in Emporia, others are starting in Topeka and elsewhere. They could be interesting and of value to groups all over the state.

Membership in the Emporia club is restricted to eight, only because it becomes unwieldy if larger. Great stress is placed on regularity of attendance and meetings are held on specified dates each month. There are no dues, there are no by-laws. The group keeps no minutes or records of the meetings. The procedure is informal except that each member must present at least one excerpt from an article he has read. It is required that this be written, and the time limit of 10 minutes allowed for each member is rigidly enforced.

One of the primary benefits to be obtained from membership in a study group is access to literature in all branches of medicine. Each member subscribes to six or eight journals devoted to his particular specialty. This gives the reading club summaries of material to be found in 50 or more publications. It serves as one of the finest means of keeping abreast with medical advancements and provides an excellent combination of education and recreation.

Study clubs need not be modeled after the Emporia plan, but it seems that interest in such a local organization should appeal to every physician. It is heartily recommended that many reading clubs be organized. Members will be well repaid for attending by the stimulus they will receive through becoming acquainted with a much broader section of the literature than would be physically possible for any individual. The Journal would appreciate hearing of the organization of any others that are formed.

Television at K.U.

Another first for the Medical School at the University of Kansas! With the installation of television facilities, the University of Kansas School of Medicine a few weeks ago became the first in the United States to use television as a teaching aid. Demonstrations have been witnessed at A.M.A. meetings during the past two years, but Kansas is alone in providing this ultra modern form of visual education as a regular piece of teaching equipment.

A camera will record procedures from the surgical or obstetrical departments and a coaxial cable will carry the pictures directly to the auditorium where 100 or more students may witness the operation at the moment it occurs. Those who have seen this in operation report that the view on the screen brings better detail than is possible even at the surgeon's side. The projector will present the picture on a screen that is five feet by seven feet, thus greatly magnifying the actual operation. The pictures will be accompanied by sound whereby not only may the procedure be witnessed but the surgeon's lecture can be heard at the same time.

Medical procedures of course will be directed on

special wave lengths and will not be available for public reception. Dr. Franklin D. Murphy, dean of the School of Medicine, announced, however, that when Kansas City gets television on October 16 lectures and other programs of general interest will regularly be televised from the medical school to the public.

The introduction of television at the University of Kansas is not only a large step forward in scientific teaching, it opens broad potentialities for expanded public relations work at the university. Dr. Murphy invites the members of the profession in Kansas to visit the school and witness a television performance at any time.

New Drug for Radiation Sickness

Dramamine, a relatively new substance, was originally intended to be an anti-histaminic drug but was discarded because others were more effective. Quite through accident while it was being administered for urticaria to a pregnant woman, who also suffered from motion sickness, it was discovered that the drug controlled the motion sickness. So its use was changed and now the sea and air traveler has the most beneficial drug yet known.

Several doctors with the Mayo Foundation reported in the Proceedings of the Staff Meetings of the Mayo Clinic that radiation sickness and motion sickness are similar in symptoms. They tried dramamine for radiation sickness and found it more successful than any other drug. It is easily administered by mouth and is economical. There are relatively few side effects noticed and the percentage of patients who benefit from its use is significant.

Eighty-two patients suffering from radiation sickness in the course of therapy for malignancies have been treated with dramamine. Since the symptoms of radiation sickness are largely subjective and because these patients by nature of their major illness might be considered unreliable in their evaluations, a control group of 23 was added to the series. Seventy-nine per cent of those receiving dramamine showed results that were excellent or good while the group receiving placebos reported only 13 per cent in those categories.

Maximum effectiveness was obtained when 100 mg. of dramamine was given 30 to 60 minutes before treatment, repeated one and one-half hours after treatment and again in three hours, making a total dosage of 300 mg. Some patients responded well on 200 mg. while others required 400. The authors suggest that at least some of the failures were caused by the patient being unable to retain the drug and that rectal administration might solve this problem, although it had not been tried. Occasional patients resisted taking dramamine, complaining that continued drowsiness resulted, but the

authors noted that an equal number in the control group resisted for similar reasons.

Dramamine is an easily administered, inexpensive drug that may be of value in radiation sickness. If this side effect can be controlled in the patient who otherwise would have to forego further radiation therapy, its use will have been established.

A.M.A. 12-Point Program

There have been so many requests in Kansas for the A.M.A. 12-point program that the Journal is printing this program in its complete form.

Federal Department of Health

1. Creation of a Federal Department of Health of Cabinet status with a Secretary who is a Doctor of Medicine, and the coordination and integration of all Federal health activities under this Department, except for the military activities of the medical services of the armed forces.

Medical Research

2. Promotion of medical research through a National Science Foundation with grants to private institutions which have facilities and personnel sufficient to carry on qualified research.

Voluntary Insurance

3. Further development and wider coverage by voluntary hospital and medical care plans to meet the costs of illness, with extension as rapidly as possible into rural areas. Aid through the states to the indigent and medically indigent by the utilization of voluntary hospital and medical care plans with local administration and local determination of needs.

Consumer Representation

4. Establishment in each state of a medical authority to receive and administer funds with proper representation of medical and consumer interest.

New Facilities

5. Encouragement of prompt development of diagnostic facilities, health centers and hospital services, locally originated, for rural and other areas in which the need can be shown and with local administration and control as provided by the National Hospital Survey and Construction Act or by suitable private agencies.

Public Health

6. Establishment of local health units and services and incorporation in health centers and local public health units of such services as communicable disease control, vital statistics, environmental sanitation, control of venereal diseases, maternal and child hygiene and public health laboratory services. Remuneration of health officials commensurate with their responsibility.

Mental Hygiene

7. The development of a program of mental hygiene with aid to mental hygiene clinics in suitable areas.

Health Education

8. Health education programs administered through suitable state and local health and medical agencies to inform the people of the available facilities and of their own responsibilities in health care.

Chronic Diseases and the Aged

9. Provision of facilities for care and rehabilitation of the aged and those with chronic disease and various other groups not covered by existing proposals.

Veterans' Medical Care

10. Integration of veterans' medical care and hospital care and hospital facilities with other medical care and hospital programs and with the maintenance of high standards of medical care, including care of the veteran in his own community by a physician of his own choice.

Industrial Medicine

11. Greater emphasis on the program of industrial medicine, with increased safeguards against industrial hazards and prevention of accidents occurring on the highways, home and on the farm.

Medical Education

12. Adequate support with funds free from political control, domination and regulation of the medical, dental and nursing schools and other institutions necessary for the training of specialized personnel required in the provision and distribution of medical care.

General Practice Publication

The American Academy of General Practice, with offices in Kansas City, Missouri, has announced plans to publish a medical journal, tentatively titled *Medicine and Surgery*. A Publication Committee has been named to settle basic questions of editorial policy and approve the selection of an advisory editorial board, and an editor, Dr. F. Kenneth Albrecht, has been selected.

Dr. Albrecht, director of the Division of Tuberculosis Control of the Kansas State Board of Health, was formerly medical editor for Williams and Wilkins Company, publishers in Baltimore. In addition to his work with the Board of Health, he also edits *Current Medical Digest*, a publication received by 110,000 physicians monthly.

Actual publication of the new journal is scheduled for early spring in 1950.

SOCIALIZED MEDICINE

Editor's Note. This is the fourth of a series of articles dealing with federal compulsory health insurance. These are designed to give the physician factual information and reliable data which may be used in the preparation of articles or speeches on this important subject. Additional material will be presented in subsequent issues.

The Draft Statistics

Since the close of the war the Federal Security Administration has turned a considerable portion of its public funds into publications propagandizing socialized medicine. One of the frequently used arguments pertains to the high rate of rejections for military service. In a memorandum of March 1946, published by the Social Security Board, it was stated that "Of 16 million youths examined, fully half were unfit for military service." It was then suggested that half to two-thirds of the defects causing rejection "could have been prevented or rehabilitated with timely care."

Dr. Maurice H. Friedman, an internist practicing in Washington, D. C., and assistant professor of physiology at the University of Pennsylvania Medical School, testified before a Senate committee upon the misuse of draft statistics. He so completely refuted the contention of the Federal Security Administration that the subject has come up only sparingly since that time. In Mr. Ewing's report to the President (discussed last month in the Journal) the draft rejections are mentioned several times, but cautiously. The old familiar statement that two-thirds of the conditions causing rejection could have been prevented is now omitted. The figures are used today only to show the public the deplorable health conditions that exist in our nation at the present time.

Dr. Friedman's analysis is long and involved but a few of his arguments might well be used by speakers on the subject of socialized medicine, and for that reason a summary of his findings is reported below.

Between December 7, 1941, and December 31, 1943, some 10 million men were examined by the draft boards. Of these, 3,600,000 were rejected. This gives a draft rejection rate of 36 per cent for the first two years of the war. Dr. Friedman points out that during this same period 2,700,000 men enlisted voluntarily, which lowers the rejection rate to 28.4. Also significant is the fact that 37.5 per cent of the remaining man power was deferred during those years because of essential occupation or dependency. No one knows how they might have fared with the draft boards, but certainly they were healthy enough

to be in productive work or to serve as heads of families.

The Federal Security Administration has played down the fact that these examinations were made for the most strenuous of all activities, that during the early years standards were high and only the most perfect could meet the requirements. Rejection on such a basis has no bearing on whether the individual could meet the ordinary demands of normal living. It means only that for this one specialized endeavor he lacked one or more of the arbitrarily selected qualifications. By way of example, the armed forces refused to take anyone who was less than 60 inches in height. This defect did not necessarily render an individual unfit for normal routine living. It is not an indication that he is suffering from ill health.

At the beginning of the war venereal infections accounted for 21 per cent of all rejections. If this cause for rejection is due to inadequate medical care, then certainly there should be little if any venereal disease among members of the armed forces. In the Army and Navy there was one doctor for each 250 men, which is equivalent to two or three times the number of doctors in our largest cities. Every known protective measure was utilized, and yet venereal disease in the armed forces was rampant in every military installation at home and abroad. Again, the lack of medical care has been blamed for the high venereal disease rate among Negroes, and yet in the Army where adequate care was available venereal disease ratios between colored and white soldiers remained exactly the same as in civilian life.

Many other causes for rejection are not preventable, such as mental disease, cardiovascular disorders, endocrine disorders, defective vision, asthma, flat feet, etc. These, together with venereal disease, account for approximately two-thirds of all rejections. These persons could not have been helped under any system of medical care. In fact, the condition for which the man was rejected was sometimes directly the result of medical care, good medical care. Diabetes was a cause for rejection, but before the day of insulin the child would not have lived long enough to be called up for an examination. Dr. Friedman asks, "Is a corpse healthier than a young man disqualified for military service because of diabetes?"

The same thing is true because of many other conditions. The majority of the young men who were rejected for physical reasons are well qualified to live normal lives under ordinary circumstances. The use, therefore, to which draft statistics have been put in trying to establish that as a nation we are unfit is utterly false and misleading. Wherever that question is raised, the answer may be given with finality.

Case Report from the University of Kansas Medical Center

Clinical Pathological Conference

Edited by Glen R. Shepherd, M.D., and Mahlon H. Delp, M.D.

Sudden Death from Aneurysm

Clinical Discussion

Dr. Delp: The case we have today is from the Medical Service. Dr. Durkee will give the history.

Dr. Durkee: This patient is a 54-year-old white male who was admitted to the hospital from the emergency room in stupor at 1:00 p.m. and died about 1:30 a.m. the next morning. His wife told us that his chief complaint was severe chest pain, back pain, and leg pain. The pain radiated to his back, lower abdomen, and both lower extremities. He was seen by his local doctor about one and a half hours after the onset of pain and was given some morphine and Nembutal at that time, before starting the trip here. There was no history of pain in the preceding few days. Past history revealed an episode several weeks before this, when the patient had been working in a field as a farmer. At that time, he had an onset of severe chest pain. He fell to the ground and rested a moment, and then got up and resumed his work. The only other point in the past history is a cholecystectomy in 1940. System review showed nocturia five times, and I could elicit no history of hypertension or shortness of breath from his wife. He had not seen a doctor since 1940.

Physical examination showed a heavy male, stuporous, and with considerable respiratory distress, respiratory rate of 36. Pupils were small and reacted very little to light. Examination of the lung fields showed them to be clear. His heart was not enlarged. There was a systolic murmur heard at the aortic area and a friction rub heard over most of the precordium. Blood pressure was 110/60, pulse 100, strong and regular. There was a diffuse, mottled type of cyanosis present over the lower extremities. The lower extremities were also cold and clammy. There was diffuse perspiration over the entire body. His pulse could be palpated in the arteries of both legs.

After being admitted, he was started on intranasal oxygen. Because he was unable to void, a retention catheter was put in place. He was stuporous for about three hours, then aroused somewhat, but he was never entirely conscious throughout his hospital stay. About nine o'clock in the evening, he began to experience more pain, and morphine was given to him for relief. Blood pressure was taken every hour and averaged about 150/70, pulse 90 to 100. The cyanosis continued. After gradually going down hill, he ceased respiration about 1:30 in the morning.

Dr. Delp: Are there any questions for Dr. Durkee?

Question: Was the blood pressure taken at various places?

Dr. Durkee: The blood pressure was taken only in the arm, not in the leg.

Student: I don't know how significant this is, but when I talked with his wife, she told me that several years previous to this he was turned down for life insurance because of high blood pressure.

Dr. Delp: I think that is most significant.

Question: What was the temperature?

Dr. Durkee: The only temperature reading was at midnight shortly before death, and it was 105 at that time. I do not know what it was at the time of admission.

Question: Were subsequent blood pressures taken?

Dr. Durkee: Blood pressure readings were taken every hour. Most of them were around 115/70, the highest reading reported was 130/70, the lowest one 110/70.

Question: Was there a Wasserman?

Dr. Durkee: Wasserman and Kahn were not done.

Question: Was the blood pressure taken on both arms each time?

Dr. Durkee: One arm each time. However, both arms were used on different occasions.

Question: What was the urine output?

Dr. Durkee: It was about 300 cc. in the original catheterization. A total of 500 to 600 cc. was voided during his hospital stay. He was not aneuric.

Dr. Delp: We have an EKG on this patient. Dr. Cochran will point out the significant features of this for us.

Dr. Cochran: The EKG shows a very rapid regular rate present, and it is difficult to identify a T wave. It is a sinus tachycardia. We think that this is simply a rapid sinus tachycardia, measuring 115 per minute. But, in addition, there is an intraventricular conduction defect for the QRS complex is slightly greater than .12 seconds, which means a bundle branch block is present. My original interpretation was that of sinus tachycardia.

Dr. Delp: There were no x-rays taken on this patient. Mr. Russell, we would like to have your differential diagnosis and the probable cause of death.

Mr. Russell (Student): There was a sudden onset of pain which reached maximum intensity at once, occurring in the thorax and back with a wide radiation of pain from the front of the chest to the

back and downward into the lower extremities, but not radiating into the arms. This is very strongly suggestive of aortic aneurysm, dissecting type. Usually characteristic of it is a long-standing pain which may last for hours or days and which responds poorly to pain relieving measures such as this did. This is usually a considerable hypertension, of long-standing hypertension, in about 49 to 60 per cent of the cases. We had no history of hypertension until we were told of it a moment ago. Usually there is a sense of prostration with or without loss of consciousness, and usually there is a moderate fever of from 99 to 101.6. There may be considerable leukocytosis, if the patient lives that long.

Physical findings may reveal little other than an extremely ill patient with a rapid, enlarged heart. And, I don't believe there was any enlargement of this heart. There is usually, however, some blocking of the circulation either to the head or legs, as if by arterial embolism, and this oftentimes will give you a clue. In some cases, there is anuria, hematuria which might or might not indicate dissection of the renal vessels. The EKG findings are by no means characteristic as they are in a pulmonary thrombosis. Except rarely, sudden death usually occurs in a few hours to a few days. Often the onset of death is the result of rupture of the aneurysm externally into the pericardium or the pleural space or the mediastinum.

In the differential diagnosis, you have to think of coronary thrombosis. Usually there is a history of angina pectoris preceding this. And this is rarely the case in dissecting aneurysm. Dissecting aneurysm gives an overwhelming onset in contrast to a more gradual development of coronary occlusion. There's usually widespread radiation in the pain of dissecting aneurysm but the radiation is rarely to the arms. Maintenance of the blood pressure in a dissecting aneurysm is usually the case although it may not be maintained—it may fall. The EKG is not characteristic. We have to think of embolism as post-phlebotic embolism to some part of the body such as the iliac or pulmonary artery, which may be confused with dissecting aneurysm. You might think of some surgical abdominal emergency. And although there is no immediate history of lung trouble, pneumonia has been mistaken in this diagnosis. But it is ruled out in this case on the basis of sudden onset of severe pain, absence of evidence of pulmonary consolidation, and too low fever.

Death has been rapid in some cases from shock or aortic rupture. In one series, in the American Heart Journal of 1937, there was reported a series of 13 cases. The cause of death in six of these was the result of rupture in the mediastinum with or without extension into the pleura or retroperitoneal

spaces. Rupture into the pericardium occurred in four cases, and one patient died from complete occlusion of the aorta and its bifurcation without rupture. One died from pulmonary edema and shock.

Dr. Delp: If this is a case with dissecting aneurysm of the aorta, is this situation incompatible with life?

Mr. Russell (Student): Not necessarily. There have been cases that have recovered where they have a double-barrel aorta. They are rare. It is certainly not a common thing. One-third of the patients with a dissecting aneurysm in the thoracic aorta die suddenly. But, usually more than 50 per cent die within 24 hours after the onset of the symptoms. Only about 10 per cent live more than a month.

Dr. Delp: Then why do you think this patient died?

Mr. Russell (Student): Well, as was mentioned in the discussion, usually death is due to hemorrhage or rupture of the aneurysm although not necessarily at the site of the initial dissection. It may occur in the mediastinum with hemothorax, or in the retroperitoneum. Possibly no occlusion of the coronary arteries may be the cause of death, possibly a dissection back into the coronary ostia. I don't think this patient had uremia. A systolic murmur is very common. I can't entirely explain the mechanism of it. Perhaps it's due to the coursing of blood.

Dr. Delp: All right, thank you. Do you have any further comments about this case (another student)?

Student: Well, I think that in the light of the patient's previous history of gall bladder disease, we have to consider that. It is possible that he had gall bladder colic. He had radiation of pain to the back. I think you have to consider pulmonary embolism with possible emphysema of the lungs as well as diaphragmatic hernia or perforated ulcer. The patient had complained two weeks before of pain so severe that he dropped to the ground. Levine says that incomplete tears of the aorta may occur with or without dissection.

Dr. Delp: Do you happen to know the tenure of life in the first case in which a dissection of aneurysm was described?

Student: No, I don't.

Dr. Delp: Anyone? ... Dr. Durkee, I think you saw this patient and had more contact with him than anyone else. We would like to have your discussion.

Dr. Durkee: The most interesting findings to me when I first examined him were cyanosis and coldness of the lower extremities, with the appearance of marked collapse yet without abnormality of the blood pressure and pulse, and the systolic aortic murmur and a friction rub. When you consider the

differential diagnosis, first I want to disclose one thing that was mentioned when the doctor called me before the patient arrived at the Emergency Room. His doctor said that he thought he had a man down there with polio. As soon as I saw him, I ruled out that diagnosis.

Considering the conditions that are more likely, I want to mention first certain pulmonary conditions which should be considered. Pneumonia with pleurisy might be thought of because of the patient's chest pain and dyspnea. Pain was rather sudden for pneumonia and there were no findings in the lungs. Also, the patient had pain in the back and extremities, which aren't usual in pneumonia. Spontaneous pneumothorax can induce sudden severe chest pain with marked dyspnea and collapse. Again, we would not have the pain in the lower extremities and the cyanosis in that area. A pulmonary infarction due to embolism a few weeks previous to the onset of the present illness should be thought of. This could have been a previous coronary occlusion with infarction which could come from a mural thrombus which broke loose into the pulmonary tree. However, there would not have been the pain in the extremities and cyanosis present. It can produce a state of collapse as seen in this patient. Certainly that would not explain all of his findings. Considering the pain in the back, we should also think of KUB disease including renal colic or acute pyelonephritis. But, neither of these conditions would adequately explain all the patient's symptoms.

Coronary occlusion with myocardial infarction should certainly be considered and was thought of because of the patient's sudden onset of chest pain. He also had dyspnea and collapse which accompany an infarction. The blood pressure and pulse would not rule out infarction because the patient had previous hypertension. A drop in blood pressure from hypertensive levels might produce a normal level as found here. However, there was no EKG evidence of myocardial infarction. Occasionally a left bundle branch block will obscure such evidence but, in as severe an attack as he had, there would be some evidence on the EKG. The attack of pain several weeks ago, as I stated previously, could have been a coronary accident with infarction. But, again you would expect some EKG evidence inasmuch as it was just a few weeks previously. The question comes up as to whether he could have had a silent infarction a few days previous to this present illness. I will discuss that a little more in some of the other differential diagnoses.

A ruptured leucic aneurysm in the chest might produce the picture of sudden onset of severe pain in the chest, but that would not explain the pain in the extremities and cyanosis. It was thought that he

did have a definite peripheral vascular partial occlusion because of the mottled type of cyanosis and the coldness and pain of his extremities.

Going from the rarest things first, you must consider a primary thrombosis in the lower part of the aorta, but that would explain only the localized pain and cyanosis and would not account for his chest pain. Arterial embolus would be considered probably from a mural thrombus following a myocardial infarction. We do have a friction rub, which would make one think of a silent infarction a few days previous to the onset of pain. The other incident was probably too remote to account for a friction rub at the present time. Again, the arterial embolus would not account for his chest pain. Considering something which is extremely rare—two different emboli, one to the coronary artery and another one to the aorta—there has been one case in which there was one embolus to the brain and another one to an upper extremity, but that is rare.

The most likely diagnosis was a dissecting aneurysm. It seemed to explain the whole picture better than any of the other diagnoses previously stated. He had a fairly typical course for a dissecting aneurysm with sudden onset of severe chest pain radiating to the back and legs, appearance of collapse, without the blood pressure and pulse being at shock levels, and evidence of arterial occlusion.

Readings in the literature on dissecting aneurysms state that the correct diagnosis was made before death in various series varying from 10 to 50 per cent. The frequency of dissecting aneurysm in sudden death, excluding traumatic death, was listed to be about one per cent and there is a series reporting the findings in total number of autopsy findings from .14 to .44 per cent dissecting aneurysm. It is twice as common in the male as in the female. It has previously been stated that exertion plays a part in the formation of the dissection. However, it is not felt that exertion has no significance whatsoever. Certainly this patient had no history of exertion immediately prior to onset.

Hypertension is found in most of the cases, in 70 to 80 per cent of those over 40 and in about 50 per cent of those under age 40. I had not had a history of the hypertension, but it has been brought out today. The symptoms of this case, as I have said, were characteristic—the sudden onset, the original rupture of the intima is usually in the ascending aorta, the sudden onset of pain is usually in the chest or sometimes in the epigastrium, radiating from there in some cases up into the head and neck and in other cases down and into the back and abdomen and into the lower extremities.

Typically there are signs of arterial peripheral occlusion. There is the state of collapse with blood

pressure and pulse levels maintained. There is also usually stupor and usually dyspnea present with dissecting aneurysm. A diastolic aortic murmur is stated as being one of the characteristic findings in dissecting aneurysms. In the dissecting aneurysm, a diastolic aortic murmur is thought to be due to distortion of dilatation of the aortic valve. However, in some series, systolic murmurs were more common, due probably to roughening in the aorta or some narrowing by the dissection. EKG usually shows no characteristic changes. The usual findings are left axis deviation or left ventricular strain. X-rays will usually show a dilatation of the aorta and, if a series of x-rays are taken, there may be found progressive dilatation. The laboratory findings usually show a leukocytosis, usually an anemia, usually albumin and red cells in the urine.

There are other conditions which should be thought of in differential diagnosis which were not considered too much here because of the patient's symptoms and findings. Various neurological conditions have been confused with dissecting aneurysms, such as cerebrovascular accidents. These may be considered in some cases because of the findings in the legs of pain and weakness. Various acute abdominal conditions may be confused with dissecting aneurysms, including perforation and colic, mesenteric thrombosis, and pancreatitis. Dissecting aneurysms present such a varied picture because of the variation and extent of the dissection. It may extend down the entire aorta or into the carotid artery and into the coronary arteries, producing a picture of coronary thrombosis. It may extend into the mesenteric and renal arteries as well as the iliac arteries or spinal arteries. Findings of albumin and red cells in the urine do not necessarily mean that dissection involves the renal arteries. Most of the articles emphasize that to make the diagnosis of a dissecting aneurysm you must think of the diagnosis. It is missed most often by not thinking of it.

The prognosis shows about 10 per cent recover (10 per cent of the cases in which the diagnosis was made); in one third of the cases, the average duration of life is 43 hours; in one case it had gone three years after apparently an acute dissection and the patient is still living.

The cause of death in most series is reported as hemopericardium with cardiac tamponade. However, in other cases, it is due to rupture into the mediastinum, pleural cavity, or peritoneal cavity. It may be due only to the particular state of collapse present. In other cases of death, gangrene of the bowel was found due to dissection of the mesenteric artery. In another one, death was due to development of gangrene of the lower extremity. Here, I think the probable cause of death was cardiac tam-

onade as he had a friction rub, which I thought was probably due to a small amount of blood in the pericardial cavity. The question I want to bring up was whether the pathologist did find any evidence of a previous dissection several weeks before this. There have been cases reported in which there were repeated dissections. One dissection occurred about 18 months after the first one.

Dr. Delp: Dr. Major, I know that medical students, internes, and residents are much more intelligent now than they were 15 years ago, but I was under the impression that this diagnosis was rather an unusual one and rather difficult to make. These boys seem to make it with ease. Do you have any comments?

Dr. Major: I think the teaching must be improved.

Dr. Delp: Dr. Major, do you think that syphilis has any bearing upon the disease that we are discussing today? There was no Wasserman.

Dr. Major: No, I didn't think so. Most dissecting aneurysms are arteriosclerotic in origin.

Dr. Delp: Dr. Berry, do you accept this diagnosis?

Dr. Berry: Yes, sir. That is a good diagnosis. I think that Dr. Durkee made a very good analysis on this patient.

Dr. Delp: Dr. Cochran, would you like to comment about this EKG again?

Dr. Cochran: Well, I would like to amend the statement about the effects of a left bundle branch block obscuring infarction slightly. It is a rule that left bundle branch block usually obscures evidence of myocardial infarction. It is the exception when any changes are apparent. It is not true of right bundle branch block, but it is true of left. The fact that this patient had what we think was left bundle branch block nullifies the possibility of the cardiogram giving much evidence one way or the other. The other possibilities that occurred to me in looking up the cardiogram were arrhythmias such as a slow ventricular tachycardia, because it was with some difficulty that the T wave was identified. However, T waves and sinus rhythm were present. If it had been ventricular tachycardia, there would have been some evidence of a myocardial infarction.

Dr. Delp: Dr. Cochran, I am not quite satisfied with the explanations for the patient's death. While I realize that this lesion is not incompatible with life, I am wondering just what was the terminal situation which developed in this case. Dr. Durkee has offered the explanation that the patient died of a cardiac tamponade. Do you believe that is possible?

Dr. Cochran: Yes. The mention of the pericardial friction rub brought in during the course

of hospitalization, raises the possibility that the lesion could have started that. The few I have seen died very rapidly of cardiac tamponade in a matter of hours.

Dr. Delp: Do you think that the patient might have died as a result of a ventricular fibrillation?

Dr. Cochran: There just isn't enough evidence as far as I am concerned to state the cause of death any more closely.

Pathological Discussion

Dr. Chaney: The heart is hypertrophied and dilated, weighing 700 gm. There is 100 cc. of blood in the pericardium. There is a small ill-defined laceration in the adventitia of the aorta about 1 cm. distal to the aortic ring. Dissection of the media of the aorta is noted throughout its length from a point 3 cm. above the aortic ring and extending past the bifurcation into the iliacs.

Dr. Boley: There are several things as far as the microscopic study is concerned. To begin with, the pericardium does not show any pericarditis. We thus do not have any answer as to the cause of the friction rub. Hypertrophy of the heart, a usual finding in these cases, was great with the heart being three times normal size. The patient had arteriosclerosis of the aorta and other vessels throughout the body.

Turning to the aorta as the most significant finding, microscopically we find the idiopathic medial necrosis, described for the first time along in the early thirties or late twenties as being the cause of most dissecting aneurysms. There is an area that looks a little more cystic, as originally described by earlier writers on this subject (Figure 1). There are cholesterol clefts in one area of necrosis and I looked for the possibility of hemorrhage but there

are no macrophages containing blood pigment. There is vascularization of the media and we might think of syphilis; however, the infiltration in this area is by polys rather than lymphocytes and plasma cells as are usually found in syphilis. Infiltration in the areas of the cystic medial necrosis of the aorta has not been described too often.

An internal tear was purposely not described in the gross because the aorta had multiple tears after removal and we cannot identify any one as a previous tear. That is not against the ordinary concept of the pathogenesis of dissecting aneurysms, for cases are described where internal tears have not been found, the hemorrhage apparently coming from the vasa vasorum into the areas of necrosis. Most authors avoid saying just what the necrotic material is. It is a degenerative change but they don't tell what the material might be. They describe the material staining polychromatic, sometimes containing calcium if there is a tendency for healing. These areas later show proliferating fibroblasts and heal over. Then, other lesions start.

Cystic medial necrosis is a lesion of the aorta in people in the later years of life. It does not necessarily lead to rupture. Just why rupture does occur is difficult to answer. In this case, we did not know at the time that the patient had hypertension, but we did surmise that the patient must have had hyper-

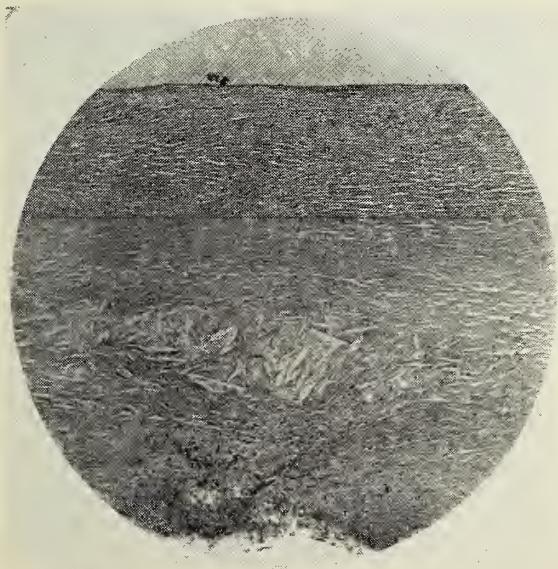


Figure 1. Photomicrograph of aorta showing cholesterol clefts and cystic medial necrosis.



Figure 2. Photograph of aorta showing dissection of media.

tension because of the generalized arteriosclerosis and the large heart. The kidneys show little involvement. I doubt that 100 cc. blood in the pericardial sac can cause tamponade. There is considerable congestion and edema in the lungs, congestion in the liver and in the spleen. This heart undoubtedly was failing. The functional disturbances that Dr. Cochran mentioned are, I think, the most logical explanation for the immediate cause of death.

Dr. Wahl: In the discussion today, I have only one comment to make. While the clinicians were giving their discussion of aortitis, I listened very intently for one of the striking findings. While they made the diagnosis, one man said that this finding was not present. I am referring to hypertrophy of the heart. I wonder why they did not notice such a large heart. This heart is not only a large heart, but a very large heart.

Dr. Delp: The question of just what part in the pathogenesis and etiology of a dissecting aneurysm syphilis plays is an interesting and not well understood one. If you look in the reported series in the past, I think you will find in each series several cases in which the patient undoubtedly had syphilis, proven by various clinical signs, various items in the history, plus the positive serology at the time of death. Occasionally those diseased aortas are definitely a part of the dissecting phenomena. I think that almost everyone who sees this disease feels occasionally that syphilis might play a part, but it must be a very minor part because there are a great many syphilitic aortas and a great many with aneurysmal deformities of the aorta, but still few of them develop dissections. As Dr. Major mentioned, the common factor associated with dissecting aneurysm is degenerative changes perhaps associated, as Dr. Boley pointed out, with medial necrosis from arteriosclerotic changes.

There has been reported by Dr. Logue of Emory University a series of cases which he discusses at some length. I believe he had 12 cases, three of whom had undoubted syphilis and he thought that perhaps syphilis played a part in the development of the dissecting aneurysm. He likewise called attention to something not heretofore described, a humming-top type of murmur, a machinery-type of murmur, and a palpable thrill over the iliacs which could be detected. This is something that would have been difficult to detect at any other area in this patient because he was so obese. Dull tinkling types of sound over the epigastrium have been described as valuable clinical signs in dissecting aneurysm. I think that neither of these two signs were elicited in this patient, perhaps because we did not look for them. Dissection was evidently extensive enough that we could have undoubtedly heard something.

In summary, I think that this case is an interesting case largely because it has the atmosphere and the grounds of the truly clinically urgent situation. And, perhaps there is none other in medicine much more dramatic. In the hurried differential diagnosis considered by Dr. Durkee as he saw this patient in the emergency room, he must have considered such things as coronary occlusion with myocardial infarction, pulmonary infarction, and some of the more dramatic and painful instances known to intra-abdominal disease. The patient's clinical findings as outlined to you are very typical, however, of dissecting aneurysm. I am sure the pathologist sees a great many of them, largely because this is a phenomenon associated with sudden death, and the pathologist is the peer of situations common to sudden death. He is the individual who sees the patient picked up in the street, in which the physician had not had an opportunity to try his spurs in making a diagnosis.

Dr. Wahl: Why couldn't this death just be due to shock?

Dr. Durkee: His blood pressure was up, his pulse was not extremely fast before death. Certainly there have been cases in the literature in which they have not been able to find a rupture into a serous cavity or any other cause of death and they just say they are due to shock. It is certainly a peculiar shock state in which the blood pressure and pulse are not indicative of a true vascular collapse. I don't know what some cases die of. There are some cases in which the patients do die of a true vascular collapse. I don't think our findings are typical of such a state.

Dr. Delp: That probably is as good an answer as anyone can give. I am sure it has puzzled a good many clinicians as to why these patients don't manifest more evidence of cardiovascular collapse, a manifestation so common in myocardial infarction. This situation seems sufficiently traumatizing to the organism that he should present the same sort of picture as does the patient with myocardial infarction. But it is empirically known that it just does not occur. I have no explanation as to why they have a sustained blood pressure so frequently. I think that may point up the fact that our conception of shock is by far not a complete one.

Dr. Douglas: What was the extent of the dissection described by the pathologist?

Dr. Chaney: It began two to three cm. above the aortic valve and extended throughout the length of the aorta into the iliac vessel.

Question: What was the episode several weeks before admission?

Dr. Boley: We have no findings to explain it.

Dr. Peete: In my opinion, this patient might well have had a drop in blood pressure. The blood pres-



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sure does not necessarily fall to recognized shock levels—the 80's or 90's—if the blood pressure was elevated to begin with. That is, it is my impression that if the blood pressure was 250 and fell to 140, for instance, there might exist as much shock in regard to blood pressure for that hypertensive individual as a drop below 90 which occurs in the individual with normal blood pressure during shock.

Dr. Delp: Dr. Peete, if we gave the impression that all patients with myocardial infarction have blood pressures going to shock levels, we apologize. We don't mean to imply that. We were talking about the cardiovascular collapse picture, which is rather common, it seems, in myocardial infarction. And, that is the picture we would like to make.

Question: How do you explain the cold clammy cyanotic extremities when pulses were felt in the feet?

Dr. Durkee: I thought he did have a partial occlusion of the arteries to his legs. I did not expect to find a palpable pulsation. I went over him several times hoping I was wrong. It would be compatible with a partial occlusion of the iliac vessels.

Dr. Delp: As a matter of fact, I think, there was one other thing that contributed to some of the cyanotic appearance of this patient's skin; that was his extreme degree of narcosis. It was profound as you can well imagine from six grains of Nembutal and ½ grain of morphine given within three to four hours prior to the time Dr. Durkee first saw him. But, nevertheless, the fundamental explanation for those vascular changes in his feet had to be interference with the arterial flow.

Question: How long does it take to split the aorta all the way down?

Dr. Delp: Dr. Durkee, how long do you think it took this dissection to progress from its point of origin to the iliacs?

Dr. Durkee: He had his onset of symptoms and pain in his lower extremities in about 45 minutes. I suppose that was the time it took.

Dr. Delp: While we cannot be positive, the history clearly suggests this elapsed time between the first pain of dissection and its arrival in the lower extremities. Then why not accept it. Don't be so skeptical about the value of historical features.

Summary

In this case we find quite a typical clinical picture of dissecting aneurysm progressing rapidly to a fatal termination. The following features follow the usual pattern: (1) severe, indescribably severe pain in the chest with radiation over the abdomen to the back and the lower extremities; (2) symptoms appearing in a middle aged male known to have a hypertension; (3) a blood pressure sustained above

the usual vascular collapse levels seen in myocardial infarction; (4) cyanosis prominent over the lower half of the body; (5) the final process resulting in death being cardiac tamponade.

Oklahoma City Clinical Society to Meet

The Oklahoma City Clinical Society will hold its annual fall conference October 24-27 at the Biltmore Hotel. A registration fee of \$15 will cover all features, lectures, postgraduate courses, round-table luncheons, dinners, banquets, commercial exhibits, and entertainment. Dr. Ernest E. Irons, president of the American Medical Association, will take part in the program.

The specialties represented in the program, with the names of the speakers, are: anesthesiology, Dr. M. Digby Leigh, Vancouver, B.C., Canada; dermatology, Dr. Francis W. Lynch, University of Minnesota School of Medicine; medicine, Dr. Joseph S. D'Antoni, University of Tulane, Dr. Louis H. Newburgh, University of Michigan School of Medicine, and Dr. Joseph B. Cander Veer, University of Pennsylvania; obstetrics and gynecology, Dr. Willard M. Allen, Washington University School of Medicine, and Dr. John Parks, George Washington University School of Medicine; ophthalmology, Dr. Arno E. Town, Jefferson Medical College; orthopedic surgery, Dr. Ralph K. Ghormley, Mayo Foundation; pathology, Dr. Lauren V. Ackerman, Washington University School of Medicine; pediatrics, Dr. Horace L. Hodes, Johns Hopkins School of Medicine; roentgenology, Dr. John F. Holt, University of Michigan School of Medicine; surgery, Dr. Carl A. Moyer, Southwestern Medical College of the Southwestern Medical Foundation, Dr. James Ross Veal, Georgetown University School of Medicine, and Dr. John M. Waugh, Mayo Foundation; urology, Dr. Dalton K. Rose, Washington University School of Medicine.

Reservations may be addressed to the Oklahoma City Clinical Society, 512 Medical Arts Building, Oklahoma City, Oklahoma.

National Magazine Recognizes Kansas

A magazine of national circulation, *Coronet*, gave an account of the Kansas Rural Health Plan in an article entitled "Kansas Answers Socialized Medicine," appearing on Page 93 of the September issue.

Academy of General Practice to St. Louis

The 1950 scientific assembly of the American Academy of General Practice will be held at St. Louis, Missouri, February 20-23. Headquarters will be at Kiel Auditorium, where all sessions will be held, and there will be no official hotel.



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Adjustment in Blue Shield Services

In a full meeting of the Blue Shield Board on September 11, the directors approved recommendations of the Blue Shield Executive Committee for an increase in Blue Shield membership dues and for certain adjustments in services. These changes are to become effective December 1, for all members whose payments fall due on that date.

It is important that members of the Kansas Medical Society understand the primary reasons for these changes and some of the limitations which were imposed upon the Blue Shield Board in modifying the program from the standpoint of meeting the wishes of certain specialty groups within the profession.

Changes in the program have been under consideration for almost a year, since it was evident some time ago that the use of service on the part of members was rising and eventually would call for an increase in membership dues. In a program involving 160,000 members it is important that changes be held to a minimum. Consequently, since an increase in dues was obvious, the Blue Shield Executive Committee considered other changes which could be put into effect at the same time which would be beneficial to the program and which would meet some of the wishes of the doctors. In the process of studying this problem consultations have been held with various specialty groups; there have been meetings with representatives of the profession, the state-wide Physician Relations Committee; and there have been conferences with representatives of Blue Shield members from all over the state. The task involved bringing together many different viewpoints.

One of the first considerations, of course, was to keep membership dues as low as possible. It is important to make a creditable demonstration of the ability of a voluntary plan to meet health needs.

One of the chief criticisms of the Blue Shield program was that it failed to provide enough non-surgical service. Many internists and general practitioners felt that there was an improper balance between service for non-surgical care and service for surgical care. The Blue Shield Executive Committee has made an earnest effort to resolve some of these differences. The new plan will provide non-surgical service in the hospital beginning with the second day instead of with the fourth day as under the old plan. It did not seem prudent to provide non-surgical service beginning with the first hospital day since it was felt that this provision would cause an indeterminate demand for service over and above the present level of use. By changing the wording in the Member's Agreement to show that the member is responsible for the physician's charges for the first 24 hours for hospital care in non-surgical cases, it is believed that the

Executive Committee has taken out of the contract the cause for the chief complaint of doctors. Thus a doctor is free to charge the patient according to the amount of time involved and the seriousness of the condition for the first 24-hour period. A number of other adjustments have been made in the program, as will be seen in the outline at the end of this article.

The Executive Committee asks the cooperation of the entire profession in the future development of Blue Shield. The Blue Shield Board does not consider this to be a static program and will work constantly through the Physician Relations Committee and all other interested groups and individuals to determine the wishes and needs of the profession in its own prepayment program.

It is desirable that physicians know some of the problems encountered in announcing changes in the program to lay members. A constant objective of the Blue Shield Board is to maintain good public relations with members so that they will better understand the basis of this developing partnership between the people and the doctors.

Printed below is a letter written by President Barnes which will be distributed this month to the members of Blue Shield.

Dear Member:

Blue Shield in Kansas in less than four years has grown to a membership of 160,000. In the first eight months of 1949 alone, close to a million dollars has been paid for service to members. More than 1,400 doctors of medicine in Kansas now stand back of the service as participating physicians.

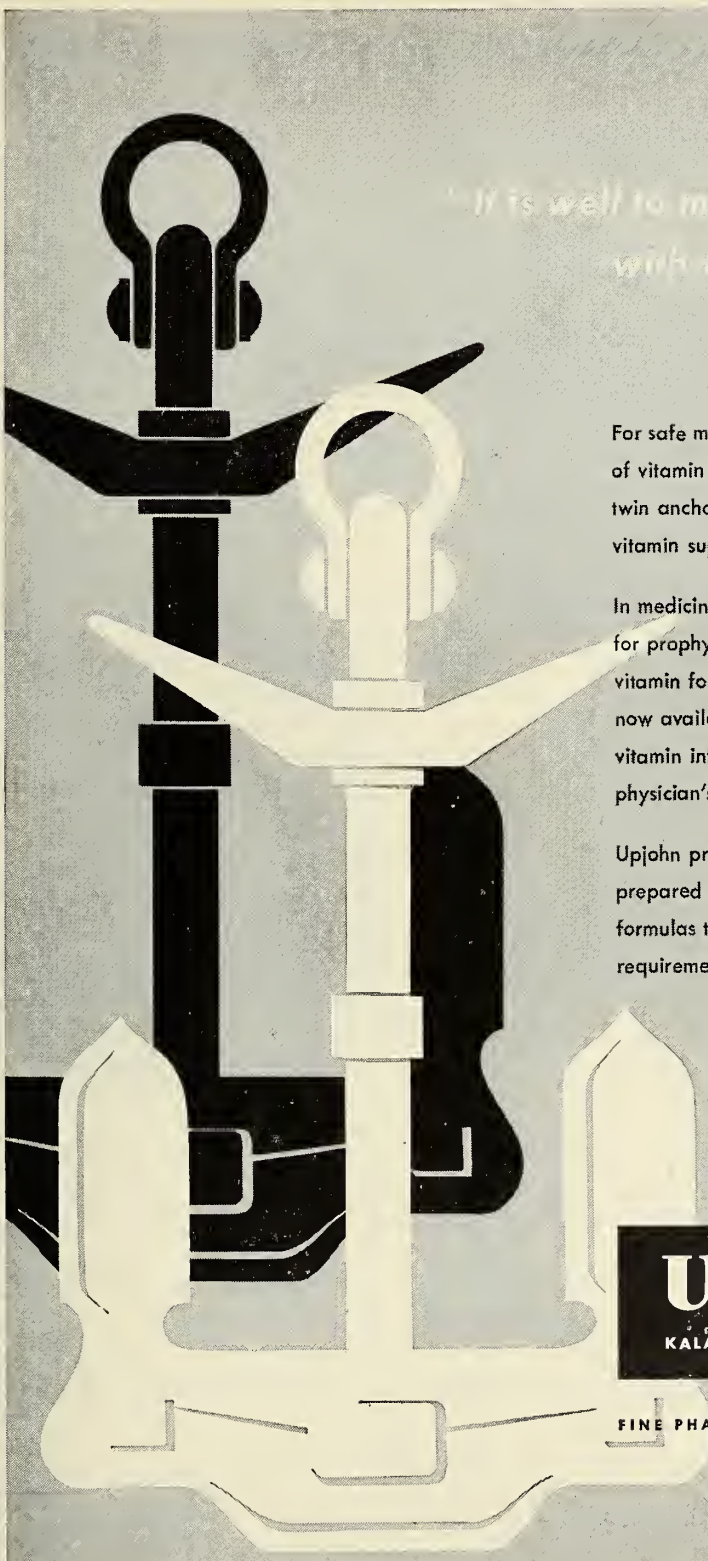
This acceptance of the plan, by both the people and the doctors of Kansas, has meant more medical care to more people. The first year about one member out of 10 used the services. Today, one in seven. We believe this increased use is good and necessary to the health and well-being of the members. But it means that the low membership dues, set in 1945, cannot carry the increased cost.

Several aspects of the situation needed consideration, and the whole matter was fully discussed in meetings with representatives of the members, the State Members Committee, on two occasions. In these meetings it was made clear that:

No increase in payments to physicians was to be considered; the same schedule established in 1945 would be continued.

The expenses of administering the service had decreased.

The primary reason for any need to change the dues lay in the increased use of service.



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with two anchors."*

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General membership, in Blue Shield experience as in Blue Cross experience, has been using about 25 per cent more service than employee group members.

While all were in agreement that every effort should be made to keep membership dues as low as possible, there was general feeling expressed that Blue Shield should make necessary increases in dues rather than lessen its essential services to members.

This means some increase in dues for all members. For the general membership the increase must be larger to cover the additional use of service. The changes will become effective on the date shown on the enclosed notice card which bears your name.

Some adjustments in the service have also been made which we believe will be beneficial to the members in the over-all operation of the service. You will find these changes described in this folder. We hope you will read it carefully. It is important that you have the fullest understanding of the provisions of the Member's Agreement and how your service works for you and your family.

Cordially,

CONRAD M. BARNES, M.D.
President, Blue Shield

The following outline will show the adjustments being made:

Basic provisions of the contract are essentially the same.

Maximum Limits in Contract Year are Removed.

The old agreement had limits of \$175, \$300, and \$1,000 on the amount of service available for the same illness, two or more illnesses of an individual member, or use of service by a family group, respectively. These limits have been removed.

X-Ray and Radium Treatment for Cancer is Added.

The new agreement has been broadened to cover the treatment of cancer by x-ray and radium therapy.

Earlier Payments for Medical (non-surgical) Care are Available.

Medical (non-surgical) care is now provided beginning with the second day in hospital. The old agreement provided medical care beginning with fourth day.

Eight Months Waiting Periods for Only Two Conditions Remain.

The old agreement excluded service for the first eight months of membership for five specific conditions. The new agreement requires waiting periods for only two conditions, namely, maternity and tonsil and adenoid operations. Services for all other conditions are

provided immediately on the effective date of membership.

Provisions for Maternity Care are Modified.

The allowance of \$50 for delivery and \$125 for Caesarean section remain the same under the new agreement. However, pre-natal visits are no longer included as a part of the maternity provision. The additional allowance heretofore made for breech and forceps deliveries and episiotomies has been eliminated. The allowance for circumcision of the newborn has been changed from \$10 to \$5.

Payments for Tonsil and Adenoid Operations are Lowered.

The previous allowance of \$35 for tonsil and adenoid operations has been reduced to \$25. The \$25 allowance comes nearer the level at which Blue Shield payments are related to average fees across the state.

Allowance for Minor Complaints or Injuries is Eliminated.

The old agreement provided an allowance for minor injuries such as bruises, sprains, abrasions, small burns, etc. This allowance has been eliminated, as well as payment for certain minor conditions such as wens, warts, etc. By eliminating these items of small cost to the patient, substantial amounts are saved for more serious and costly care.

Allowance for Consultations is Eliminated.

The new agreement does not provide the allowance of \$5 for consultations which was included in the old agreement. This was not an adequate allowance for consultations involving the services of specialists.

Air Force Medical Service Organized

Final reorganization of the Office of the Surgeon General, U. S. Air Force, has been completed, Major General Malcolm C. Grow, USAF Surgeon General, announced recently. The Department of the Air Force was provided with its own medical service on May 13 by direction of Secretary of Defense Louis Johnson. It had formerly been under Army control.

The Office of the Surgeon General will supervise all medical activities of the air force, including operation of hospitals at air force bases in this country and overseas. It will also render technical supervision over the School of Aviation Medicine, Randolph Field; the Aero-Medical Laboratory, Dayton, Ohio, and the Arctic Aero-Medical Laboratory, Alaska.

The Air Force Medical Service is participating in joint staffing of Army general hospitals and other joint Army medical activities.

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Aureomycin is now generally accepted as one of the most versatile antibiotics yet isolated. In addition to attacking the Gram-positive cocci with great effectiveness, it is useful against many Gram-negative organisms, particularly those of the coli-aerogenes group. It is also effective against rickettsial infections and certain diseases of unknown etiologies, such as primary atypical pneumonia. Aureomycin in solution with sodium borate has been found highly effective in the eye in a concentration of one-half per cent. Among others it is active against the diplobacillus of Morax-Axenfeld, Friedländer's bacillus, staphylococcus, pneumococcus, and *Hemophilus influenzae*.

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Medicine in Europe

Editor's Note. This is the second of a series of articles prepared for the Journal by Dr. F. R. Croson, Clay Center, who is now traveling in Europe.

Holland has three levels of income which they take into consideration in their National Health Insurance Act, those whose annual income is 4,000 kroner (\$1,400) or below, those whose income is 4,000 to 6,000 per annum, and those whose income is above 6,000. Deductions are on a percentage basis, six per cent from the employee and the same from the employer. All employees must belong to the National Association unless their income is above 6,000 kroner, and in that case they cannot get sickness insurance and are private patients. The sickness expense for all indigent patients is met by the state. The system is badly abused in as much as patients with high incomes creep in for treatment to which they are not entitled. They are often referred to a "free" hospital for operative care upon the word of their attending physician only. One man may have expressed it very well when he stated that the Dutch became such good schemers under the occupation to outwit the Germans that they had difficulty overcoming that habit.

For the deductions the patients receive almost complete medical care—except for expensive or unusual examinations, medications or treatments in the low income group. These exceptions must be ordered by the physician, paid for by the patient who is reimbursed about 60 per cent. Those in the middle group receive from 60 to 72 per cent of medical expense, depending on the case, which is reviewed by a board of technical economists. The plan seems to work well but all the medical care plans in all of the occupied countries during the war were badly interrupted.

I spent one morning at the Binner Gykhuis at Amsterdam. The chief surgeon told me that about 90 per cent of the Dutch in the larger cities were covered by insurance and he thought about 80 per cent of the rural population. This was substantiated by a surgeon at Alkmaar who told me that about 22 per cent of the patients he saw were private patients.

Fees are set by the state for the people who are insured and are paid to the doctor, the druggist and the hospital by the insurance company, which is owned by the state. There is always a deficit and this is made up by direct taxation. Incidentally, I told you last month that Norway had the oldest plan of national health insurance, but the Dutch informed me that their plan is older although they would put no definite date on the origin of their plan.

* * *

Our visit to Belgium was over the week-end of their celebration of liberation from the Germans five years ago. It was a real event and lasted over

several days. I did not have an opportunity to visit a hospital there as most of the members of the staff were assisting with the celebration. I did meet with a doctor and a manufacturer in a social way at one of their homes. They were well informed and gave me the material I am reporting.

Only employees are entitled to "free" medical care in Belgium. The employee has eight per cent of his wages deducted and the employer contributes 18 per cent. This all goes to the Official National Secretary of Security (O.N.S.S.) which is the financial agency of the plan. It is not a complete plan in as much as the insured obtains only 40 to 60 per cent of his medical expense to the hospital, druggist and doctor, and if he requires the service of a specialist he is entitled to only 18 per cent. Needless to say, specialization is not as sharply defined as in England or Sweden.

Obstetrics pays an additional fee of about \$60 per case. This is a flat rate and the obstetrician must abide by it and take the bitter with the sweet. The O.N.S.S. also pays the parents 75 kroner every quarter for each child born to them until the child is 17 years of age, providing he does not become a wage earner before that age. It also provides medical assistance for the indigent and the unemployed, but there is no way in which an employer can benefit by their plan and the fees he pays are only slightly less than our fees at home.

* * *

In Paris we visited the American Hospital and received a grand welcome. It is strictly a private hospital which is operated much the same as we operate our hospitals at home. Most of the patients are American, but some are French who come to this institution for treatment. There I met a Russian woman who was a welfare worker and had been associated with the hospital for 27 years and had a world of information about French medicine.

It is controlled by the Securite Sociale, established July 1930, and is almost 100 per cent in its membership. Every employee must belong to it. Employees contribute six per cent of their first 22,000 francs per month income, and the employer contributes 10 per cent. Any employee over 65 years of age contributes only two per cent but the employer's 10 per cent is fixed. It is interesting to note that when the plan was adopted the deductions were on the first 1,500 francs per month but the platform has been raised to the present 22,000 largely due to inflation and the resulting decrease in the franc value. It probably is due for another raise in the immediate future.

The members of the Securite Sociale are entitled to physicians' and surgeons' services, also services of clinics and complete hospital service if needed. They are not entitled to x-ray examinations or treat-



A POOR POINT OF VIEW!

... With so much going on in the world it's a shame to emulate the traditional position of the ostrich ...

... Busy physicians with heavy working schedules, often are tempted to "get away from it all" by laying aside their professional journals and relaxing with the latest "who dunit" murder mystery ...

... Relaxation is fine, but too much is happening in the world of medical science and medical economics to remain out of professional circulation for more than a short time ...

... The Journal gives you the latest information on scientific matters, news of the profession, and also what is new in drugs, medical appliances, and special services. Don't overlook the educational value of the ads. You can trust their reliability, for only products accepted by A. M. A. councils are advertised.

... Most offer samples. Write for them and in that way help us prove the point we often make, that ... "Kansas physicians read their state medical journal."

THE JOURNAL OF THE KANSAS MEDICAL SOCIETY

ments, hydrotherapy, appliances or expensive and unusual medications. They also have a very limited dental service—largely extractions.

The patient pays the hospital, doctor or druggist directly, sends his receipts to the S.S., which reimburses him. He is not entitled to any treatment unless he has worked continuously for 66 hours. If any member of the family is an employee or has ever been since July 1930, that family is a member of the S.S. As you can readily see, this is the reason for almost 100 per cent coverage.

The organization pays an unemployed insurance but the unemployed must report to the S.S. office once a week with his card. During the period of unemployment he is a member in good standing. It also pays an additional fee for obstetrical cases, 6,000 francs if the patient is delivered by an M.D. and 7,500 francs if delivered by a midwife.

All members may be pensioned at the age of 65. Those who have belonged to the S.S. five years or less receive almost nothing and are therefore compelled to continue to work. If a person has belonged 15 to 20 years his pension is enough for him to live comfortable without any other income. It also pays a family for every child born. This amount varies first according to the zone in which the family lives as some zones are more expensive than others; second, according to the number of children in the family, and third, it depends upon whether both parents are employed. If the mother must remain at home and care for small children, she also draws upon the fund. This is paid until the child is 17 years of age and is in school or not employed. This age limit may be advanced to 20 years if the child continues to go to school or is dependent because of illness. If for some physical reason he cannot be employed, then the deduction from any member of his family, who is employed, makes him eligible for benefits. It is quite an elaborate system but a family with 10 children in Zone 1 would draw 45,850 francs per year if all the children were under 17 and the mother was not employed.

In Paris I saw an x-ray operating table. The table had a fluoroscopic screen built in it. The tube was placed above the patient and table and the radiologist simply lay down in a dark box under the table and through a speaking tube directed the efforts of the surgeon. It was said to be very excellent for removing foreign bodies and was developed during the last war. It seemed to me that it might well increase the mortality rate of radiologists.

* * *

In Munich, Germany, I was most fortunate to meet Dr. H. Girard, who has been in the practice of internal medicine there for 30 years and is a veteran of both wars. He was well informed and very graciously gave me a lot of his time and

answered numerous questions concerning the method of practice in his homeland.

The German system, first introduced by Bismarck about 1870, is divided into three distinct groups, the government controlled *Krankenkasse*, the voluntary *Krankenkassen*, and the private practice. All employees whose salary is less than 400 marks a month must be members of the government *Krankenkasse*. The amount taken from the salary is about 20 per cent but this is equally divided between employee and employer. Anyone who has ever belonged to this group may continue his membership there even if his income far exceeds the stipulated amount. This is an imposition on the doctors and the example cited was that of a butcher who worked in a shop and was therefore a member of the government K.K. When he prospered and became the owner of a large wholesale shop himself, he was still a member and the doctor was obliged to treat him at the rate of the near indigent.

Doctors and hospitals must also join the *Krankenkasse* in order to treat these patients, and the patient is free to go to any member doctor, clinic or hospital for treatment, which includes all medical and surgical care, hospitalization, when ordered by the doctor, medications, ambulance service, and a limited dental service which allows extractions and cheap dentures. If fillings of a permanent nature are desired he must pay for these himself. Trusses and glasses are also supplied. During any period of illness the member draws sickness insurance which is an appreciable amount, if he has paid a considerable sum into the organization. If an illness requires the services of a specialist, the patient must be referred by the attending physician.

Twenty-five per cent of the amount collected by the K.K. goes to pay the doctors. The other 75 per cent goes to hospitals, druggists, dentists, appliance houses and for administration. The exact cost of the last item is unknown. The government pays the doctors once every quarter. The payment is made pro rata. When a patient calls on the doctor he presents a slip from his employer giving the name, address and number. The doctor keeps the slip and inserts the diagnosis and the treatments. No patient can get more than one slip during a quarter. These slips are supposed to be worth three and a half marks each, but if a doctor turns in more than 800 per quarter, they are worth less—possibly two and three quarters marks, and he cannot turn in more than 2,000 per quarter.

A board of equalization meets and goes over these slips. The ones which are allowed are added up and the payment pro rated. The more work a doctor does, the less the amount paid per slip. This works a real hardship on the profession during an epidemic. Many patients are treated for 90 days



★ *Epileptic Men of Genius* ★

The brilliant English poet, Lord Byron, who had many mild convulsive attacks during his short life, is an outstanding example of the fact that epilepsy need not cloud a man's mentality.

Comparative studies have shown that in some cases better control of grand mal as well as petit mal seizures can be obtained with Mebaral than with corresponding doses of other antiepileptic drugs. Mebaral produces tranquillity with little or no drowsiness. It is particularly desirable not only in epilepsy but also in the management of anxiety states and other neuroses. The fact that Mebaral is almost tasteless simplifies its administration to children. Average dose for children ½ to 3 grains, adults 3 to 6 grains daily. Tablets ½, 1½ and 3 grains.

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for three and a half marks or less. This amount has the purchasing power of less than one dollar.

Obstetrical cases are extra, as are operative fees, but these must come out of the original 25 per cent.

The second great group consists of the voluntary Krankenkassen. This group consists of families whose income is greater than 400 marks per year and who do not belong to the government K.K. We would call these cooperatives. The membership is made up largely of business men and shopkeepers. About 50 per cent of those eligible belong. They pay from 20 to 50 marks a month into the organization. They are treated on a fee basis and their benefits vary according to contract. The patient pays part of the cost directly to the hospital or doctor. A premium of 50 marks a month would entitle a family to almost the same protection as is given under the government plan. These voluntary Krankenkassen usually have a reserve at the end of their fiscal year and this is refunded to the membership. Some have refunded as much as 33⅓ per cent of the premiums. For this reason many patients in this group will pay privately small amounts to the doctor for they are not eligible to refund if the service has been used at all.

The third group is made up of private patients. About 50 per cent of the patients of old established doctors in a specialty are from this group. These are doctors who have built up a reputation through the years. No young doctors have any private patients and many of the older doctors who would not accept any K.K. patients before the Nazi regime are now glad to have them. Many people who had been private patients for years are now K.K. patients because of financial reverses. Any man who was wealthy in 1914 has done well if he has salvaged six per cent today.

All doctors, with a very few exceptions, belong to the Krankenkasse plan. They are forced to do so for economic reasons. A man must be in practice for a year before he is eligible to belong and for five years if he wishes to qualify as a specialist.

Finally, if a doctor in Germany nets as much as 1,000 marks a month he must pay the government 850 marks as income tax. There is no greater heritage than being a citizen of the United States of America.

* * *

I spent a part of two days at the 98th General Hospital of the U. S. Army with Colonel Robert T. Gants, M.C., U.S.A., who is from Downs, Kansas! He was most hospitable and gracious and we spent a great deal of time visiting about Kansas doctors. You would all be proud of the grand work he and his staff are doing for our boys in the Army of Occupation.

A report on Austria would be to repeat all of Germany. The general set up is the same although percentages vary slightly. I have had an opportunity in Vienna to see Dr. Paul Werner, Dr. Finsterer and Dr. Boehler work. Many of you have visited the Krankenhaus der Stadt Wien, the Allgemeine Krankenhaus and the Boehler Klinik, and I am sure they were of as much interest to you as they were to me.

COUNTY SOCIETIES

A meeting of the Central Kansas Medical Society was held at Hays, September 15. The scientific program was presented by two Hays physicians, Dr. John Moore, who spoke on "Hip Joint Conditions in Childhood," and Dr. A. M. Cherner, who discussed x-ray therapy. Dr. Haddon Peck, St. Francis, president of the state society, explained Reorganization Plan Number 1, after which Mr. Proctor Redd of the Blue Shield office, Topeka, spoke on activities and plans of that organization. At the business session Dr. Fagan White was elected delegate to fill the unexpired term of the late Dr. F. S. Hawes, and Dr. White and Dr. Lloyd Reynolds were instructed to attend the state conference of county medical society officers at Wichita, October 2.

* * *

Dr. John A. Grove, Newton, was speaker at a meeting of the Butler County Society at El Dorado, September 12. He spoke on fractures.

* * *

The Cowley County Society met September 15 at Arkansas City. Dr. John A. Segerson, Menninger Clinic, Topeka, discussed "Cerebral Accidents."

* * *

The Reno County Medical Society was host to the Mid-central Kansas Medical Society at Hutchinson, September 7, with 56 members attending. Dinner was served at the officers' club, after which a scientific program was given at the Hotel Bisonte. Dr. Ferdinand Helwig, pathologist at St. Luke's Hospital, Kansas City, Missouri, spoke on "Pathology of Tumors of the Thyroid, Mediastinum and Chest," illustrating with slides of cellular pathology and discussing clinical aspects of each disease.

* * *

The first fall meeting of the Shawnee County Society was held September 6. Dr. A. Lawrence Able of London, a member of the Section of Proctology of the Royal Society of Medicine, was present as a guest and told of medical practice in England under the socialized plan.

The date for the 91st annual session of the Kansas Medical Society has been set—May 15-18, 1950.

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In addition to diagnostic laboratory services, chemically accurate and clinically tested reagents, solutions, stains and culture media are available for immediate delivery.

ACTIVITIES OF MEMBERS

Dr. Victor E. Moorman, who recently finished a residency in ear, nose and throat work at Washington University, St. Louis, is now practicing in Hutchinson in association with Dr. Gordon E. Stone.

* * *

Dr. E. R. Hill, Lyons, recently completed a graduate course in surgery at Cooks County Graduate School of Medicine, Chicago.

* * *

Dr. and Mrs. R. L. Drake, Wichita, who went to Europe in August, were in Paris early in September where Dr. Drake attended the International Neurological Congress.

* * *

Dr. M. Leon Bauman, Parsons, director of the Labette County health unit, went to Cambridge, Massachusetts, last month to enroll in a nine months course in public health administration at Harvard University.

* * *

Offices of the Southwest Clinic were opened in Ulysses recently, supplementing the offices of the clinic in Syracuse. Members of the staff are Dr. E. R. Beiderwell, Dr. Robert R. Sewell, and Dr. Cecil E. Petterson. Dr. Sewell will be resident physician.

* * *

Dr. Donald Upp, Winfield, has resigned his position as Cowley County health director to take up a similar position in Hanford, California, for Kings County.

* * *

Dr. Henry H. Dunham of the University of Kansas Medical Center recently spent a month in Oak Ridge, Tennessee, studying the techniques of using radioactive isotopes in research. He was one of 32 scientists enrolled for the course offered by the Oak Ridge Institute of Nuclear Studies.

* * *

Dr. Jack T. Terry, who has been on the staff of the Achenbach Memorial Hospital at Hardtner, resigned last month to become associated in practice with Dr. Thomas McElroy, in Ponca City, Oklahoma.

* * *

Dr. William M. Brownell, who has been practicing in Arkansas City, is now associated with the Veterans Administration Hospital at Wadsworth.

* * *

Dr. Henry O. Marsh, Wichita, was one of the speakers at the convention of the American Occupational Therapy Association held recently in Detroit, Michigan. His subject was "Assembling Forces for the Cerebral Palsied Child."

Dr. R. S. Roberts, who recently finished a residency at St. Francis Hospital, Wichita, has opened an office in Ottawa.

* * *

Dr. Robert F. Freeman, a recent resident in psychiatry at Winter Hospital, Topeka, is now practicing in Nortonville and was guest of honor at a community reception in August.

* * *

Dr. Ben H. Buck, Jr., a member of the Sedgwick County Society, is completing a residency in surgery at Veterans Administration hospitals in Wadsworth, Kansas, and Hines, Illinois.

* * *

Dr. Andre Baude, Topeka, was recently made a fellow of the American College of Chest Physicians.

* * *

Dr. W. O. Nelson, Lawrence, has returned from Nova Scotia where he took postgraduate work at St. Anthony Hospital.

* * *

More than 1,000 persons attended a community basket dinner at the Goodland park August 28 when it was dedicated and named Gulick Park in honor of Dr. A. C. Gulick. Dr. M. J. Renner, Goodland, delivered the address, and the program was broadcast over station KWGB. The station also honored Dr. Gulick during the week by a daily program telling the story of his life.

DEATH NOTICES

CLAUDIUS ESTYL BANDY, M.D.

Dr. C. E. Bandy, 72, a member of the Ford County Society, died August 27 at his home in Bucklin. He was graduated from the Hospital College of Medicine, Louisville, Kentucky, in 1905 and came to Kansas in 1911, practicing first at Kismet and Kingsdown. In 1918 he moved to Bucklin and continued to practice there until his retirement a few months ago because of poor health.

* * *

CHILTON W. McLAUGHLIN, M.D.

Dr. C. W. McLaughlin, 73, coroner of Wyandotte County since 1944, died September 22. He had practiced in Kansas City since his graduation from the College of Physicians and Surgeons, Kansas City, in 1900. During World War I he held three public positions, physician for the Kansas State School for the Blind, commissioner of health and sanitation for the city, and assistant epidemiologist for the United States Public Health Service. He was a member of the Wyandotte County Medical Society.

The year that got away—



LONG AGO, he'd planned the year, the day, the hour of his retirement.

But now, a year beyond that date, his desk is still open . . . the weekday trout still in the brook.

What happened? Unexpected expenses . . . Nickie starting college . . . the last of Mom's hospital bills. He never really figured it out. But the happy day he planned was no longer in sight.

A lot of years are getting away from a lot of people . . . because they don't have a plan which helps them save money regularly. But there are people who are making the most of the years, by investment in United States Savings Bonds.

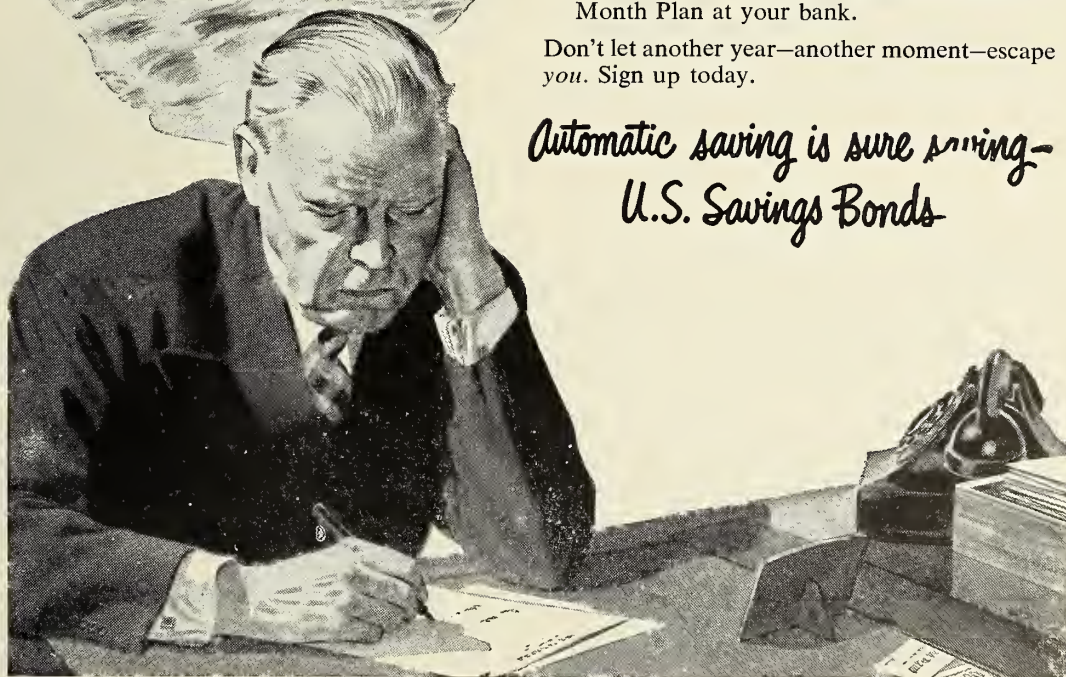
It's an easy, automatic way of insuring a financial future, thanks to two simple, *automatic* plans:

1. The Payroll Savings Plan, at the firm where you are employed. You get a bond just as often as you like.

2. If not on a payroll, join the Bond-A-Month Plan at your bank.

Don't let another year—another moment—escape you. Sign up today.

*Automatic saving is sure saving—
U.S. Savings Bonds*



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THE KANSAS PRESS LOOKS AT MEDICINE

For this section of the Journal the Editorial Board selects representative opinions from the press. These are presented to give the medical profession a review of current editorial expression and include opinions that are both favorable and unfavorable to medicine. The Editorial Board would appreciate hearing from the membership regarding selection of material for this column.

Maybe AFL Could Learn from AMA

The 12-point national health program of the American Medical Association is a far cry from the position which that organization held for so long. For years it has expended much time and effort in a determined negative stand on any sort of "socialized medicine." But the AMA has evidently taken note of public sentiment and concluded that the status quo, whatever its merits, can no longer be preserved.

So the association has come out for such revolutionary (for them) measures as a Cabinet department of health, a national foundation for medical research, greater emphasis on industrial medicine, voluntary health insurance, rural health centers, mental hygiene, health education, and so on.

In contrast to this retreat from a fixed position we have the testimony of AFL President William Green on a new labor relations law. Green has never budged from his opposition to the Taft-Hartley act or admitted that it was ever anything but totally evil, from first word to last. He has never, to our knowledge, admitted that union leaders have ever indulged in any excesses of power or privilege. He has never admitted that any regulation of union activity was desirable or necessary.

Perhaps it's in the nature of their profession, but it seems to us that the members of organized medicine have felt the public pulse more accurately than the members of organized labor. There was a time when it seemed that no group could be more adamant than the officers of the AMA. But, whether or not their program is either what the people want or what Congress will pass, it can be said that they have seen the light.

The task of Congress would be easier and our industrial future would be brighter if men like Green could have a similar revelation. It is obvious that the AMA realized at length that the public has quite as much at stake in national health legislation as the medical profession does. We hope that Green and others of like mind will also come to believe that a labor law is not simply a grant of privilege to the unions, but a code of regulations that affects consumer and employer as well as the worker.—*Coffeyville Journal*, February 22, 1949.

They Hold the Power

American doctors through their great national organization, the American Medical Association, have raised more than \$1,500,000 already to finance a campaign for the American people against socialized medicine as proposed by President Truman.

Would the doctors permit a suggestion? Is there any professional or business man in America who has more influence on the people with whom he comes in contact than the family doctor? Providing literature and lectures upon the dangers involved in the destruction of the practice of the family doctor is quite essential. Certainly it is most proper that the American people be informed as to the arguments. But getting down to practical mechanics, the American doctors who do not want socialized medicine should go to work campaigning among the people who send for them and to whom they are both physicians and counselors. They can create more virile sentiment in opposition to the socialized thing than in any other way by taking the case directly to their patients. Doctors who are not willing to do this can hardly proclaim themselves as opponents of the socialized program. Doctors have the power and they ought to use it.—*Pittsburg Sun*, June 22, 1949.

* * *

Moral Power

In its conclusion to a long editorial on compulsory government health insurance, Life magazine says, "What worries us is the loss of moral power that must come when a people turns more and more to compulsion to solve its problems. Left to their own devices, the U. S. people have shown both ingenuity and ability in meeting their needs through voluntary action. Without state compulsion they have created the best medicine in the world. What is more, they have demonstrated that American capitalism can shape the social instruments necessary to a modern society without relinquishing the freedoms and responsibilities that make it strong."

The fight against compulsory health insurance is not a selfish fight against improving medical service to the American people. The country needs more doctors. It needs more hospital beds and other facilities. The point is how to get these additional requirements without destroying the magnificent achievements we have already made. Senator Smith of New Jersey described the problem admirably in this little parable: "I think of a man who lives in a fine big house with a leaky roof. The man says, 'This is horrible... We must tear down the house and go build a wonderful new jail and live in the jail instead.'" Compulsory health insurance, which would inevitably regiment and subject to political

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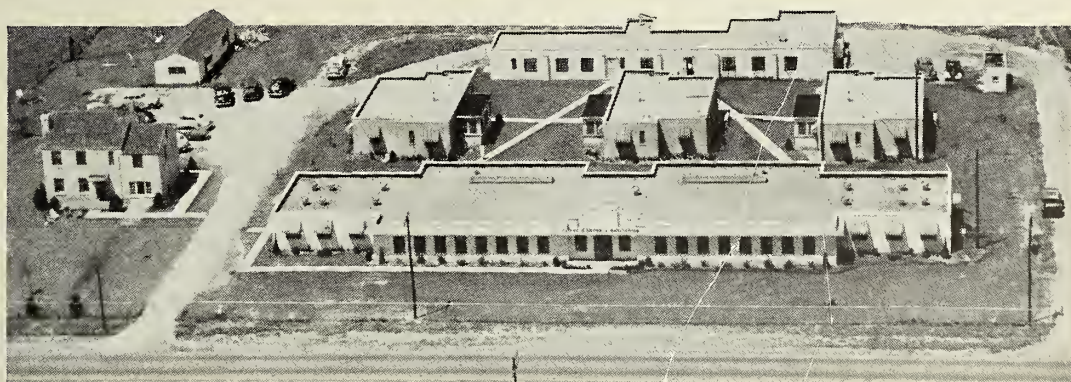
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coercion the medical profession of the nation, would be such a jail.

What, then, is the proper solution to the medical care problems we have left? It lies in the voluntary prepayment medical plans which now serve some 50,000,000 people, in the constant progress the doctors and scientists are making in both extending and improving standards of care, in some workable means of helping those who are actually indigent. Then we can have even better health—without the jail.—*Atchison Globe, May 26, 1949.*

Request for Data on Twins

A request for information on twins is made by Dr. A. C. Ivy, of the Department of Clinical Science, University of Illinois, Chicago, who is compiling information on the respective importance of hereditary predisposition and environmental influence in disease in man. Information already assembled has shown a hereditary predisposition to tuberculosis, diabetes, tumor formation, and a high, medium or low intelligence quotient.

The current study concerns predisposition for peptic ulcer. Only six cases of the occurrence of peptic ulcer in one or both of mono- or dizygous twins have been reported in readily accessible literature, although plenty of material should be available since twins are born in one of 86 births and identical twins in one of 344 births. The general incidence of ulcer is from five to 10 per cent.

The information Dr. Ivy wishes to have concerns cases about (1) one or both twins developing peptic ulcer, (2) the site of the ulcer, (3) the age of onset, (4) the type of twins (monovular or diovu-

lar), (5) the sex of the twins, (6) the date of birth, and (7) the number and age of brothers and sisters and the absence or presence of ulcer in each.

Eleven to Medical Faculty

The appointments of ten physicians and one doctor of philosophy to the faculty of the University of Kansas School of Medicine were announced recently by Chancellor Deane W. Malott. All appointments have already become effective.

The physicians are: Dr. O. W. Davidson, associate in the department of surgery; Dr. Stanley R. Friesen, assistant professor of surgery; Dr. LeRoy Goodman, associate in gynecology and obstetrics; Dr. Merrill T. Eaton, Jr., associate in psychiatry and neurology; Dr. Morton Jacobs, associate in psychiatry and neurology; Dr. John Mayer, instructor in surgery; Dr. Michael Donavon, instructor in surgery; Dr. Frank X. Dwyer, assistant in dermatology; Dr. Robert J. Murphy, assistant in dermatology; Dr. Charles A. Crockett, assistant in ophthalmology.

Dr. Leonard A. Walker, who earned his Ph.D. at the University of California, will be assistant professor of biophysics and will assist in the cancer research program.

ANNOUNCEMENTS

October 17-23—Clinical Congress, American College of Surgeons, Chicago. Including Sixth Inter-American Congress of Surgery. Headquarters at Stevens Hotel. Address Department of Public Relations, 40 East Erie Street, Chicago 11, Illinois.

October 24-29—Course in Preclinical Science in Internal Medicine, American College of Physicians, at Washington University School of Medicine and St. Louis University School of Medicine, St. Louis, Missouri. Address E. R. Loveland, Executive Secretary, 4200 Pine Street, Philadelphia 4, Pennsylvania.

October 27-29—Course in Gastrointestinal Surgery, Boston City Hospital, Boston, Massachusetts. Address National Gastroenterological Association, Department GSJ, 1819 Broadway, New York City.

October 28-29—Sixth Annual Meeting, Association of American Physicians and Surgeons, Book-Cadillac Hotel, Detroit, Michigan. Address Secretary, 360 North Michigan Avenue, Chicago 1, Illinois.

November 7-12—14th Annual Assembly and Convocation, International College of Surgeons, United States Chapter, Atlantic City, New Jersey. Open to all doctors of medicine interested in surgery. Address inquiries to Arnold S. Jackson, M.D., Secretary, Jackson Clinic, Madison 4, Wisconsin.

November 9—Third Annual Southwest Regional Cancer Conference, Blackstone Hotel, Fort Worth, Texas. Hosts, Tarrant County Medical Society and Tarrant County Unit, American Cancer Society. No registration fee. Address, Tarrant County Medical Society, 209 Medical Arts Building, Fort Worth 2, Texas.

February 20-21—Tenth Annual Congress on Industrial Health, Roosevelt Hotel, New York City.

February 20-23—Scientific Assembly, American Academy of General Practice, Kiel Auditorium, St. Louis, Missouri. Reservations Accepted to January 16. Address Hotels Reservation Bureau, A.A.G.P., 1420 Syndicate Trust Building, St. Louis 1, Missouri.

March 26-30—Pan-American Association of Ophthalmology, Miami Beach, Florida. Conference of National Society for Prevention of Blindness in Conjunction. Headquarters at Floridian Hotel, Miami Beach.

May 14-19—International and Fourth American Congress on Obstetrics and Gynecology, New York, New York.

MAY 15-18—91st ANNUAL SESSION, KANSAS MEDICAL SOCIETY, WICHITA, KANSAS.

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ABSTRACTS FROM CURRENT LITERATURE

Procaine-Penicillin

Observations of the Use of Procaine-Penicillin.
By Merl J. Carson et al, *Jnl. Ped.*, 34-1, 40-43, Jan., 1949.

A standard dosage of 150,000 units was given to children under 11 kg. body weight, and 300,000 units were given to children over this weight. Adequate therapeutic serum penicillin titers of 0.1 unit per cubic centimeter or more were obtained in all patients studied 12 hours after injection. In the great majority of patients titers of 0.1 unit per cubic centimeter or more were found 24 hours after a single injection.

When quite high titers were desired the injections were given every 12 hours. The procaine-penicillin is rapidly absorbed and it is not necessary to give an initial plain crystalline penicillin.

As long as there is a possibility of inhibition of sulfonamides by aminobenzoic acid derived from the procaine, it is felt that plain crystalline penicillin should be used in the more severe infections where the sulfonamide drugs must be concomitantly employed.

Toxic or allergic reactions in children are uncommon. If a patient should be penicillin sensitive, pyribenzamine will successfully relieve the allergic manifestations, and at a later date when given prophylactically prior to subsequent injections of procaine-penicillin, no allergic reactions are likely to occur.—D.R.D.

* * *

Peptic Ulcer

Prevention of Recurrences in Peptic Ulcer. Theodore L. Althausen, *Ann. Int. Med.*, 30:3, 544-559 (March) 1949.

This author first emphasizes the importance of peptic ulcer. It ranks 20th in the United States among chronic diseases, 14th among causes of invalids disabled, 12th among causes of working days lost, and 10th among causes of death from chronic disease.

The results of immediate treatment are excellent in peptic ulcer. Prompt relief and healing of the ulcer are produced in over 90 per cent of cases. However, the disappointing feature is the recurrence of ulcer in 10 per cent to 36 per cent during the first six months, and in 46 per cent to 93 per cent in the first five years. Among the accepted inciting causes for recurrence are physical and mental fatigue, emotional disturbances, dietary indiscretions, infections, seasonal factors, and inadequate medical treatment.

A first step in prevention is proper diagnosis,

reached by correlating all clinical and radiological evidence.

Adequate treatment is then considered with emphasis on the usual dietary, antacid, antispasmodic, and sedative medication. Antacids should be continued at least six months. Inadequate treatment may relieve pain, but allow the ulcer to progress to one of several serious complications, such as hemorrhage. This tendency to inadequate treatment is greater among ulcer patients, because Crohn has shown that such patients may be insensitive to pain, the proportion being three times greater in ulcer patients than in the general population.

One measure which may specifically prevent recurrence is enterogastrone. Preliminary work indicates that this not only heals but prevents recurrence. The originators, Greengard, et al, claim that it increases mucosal resistance to ulceration. Further investigation is in progress.

General measures of value in the prevention of recurrence are the following:

1. Education. The patient should be instructed in the nature of his disease and the importance of continued treatment.

2. Occupational problems. Because of the importance of physical and mental fatigue in recurrence, occupational adjustments may be necessary.

3. Psychosomatic relations. The typical ulcer patient is tense, ambitious, and meticulous, and minimizes his pain to go ahead with his work. This is in contrast to the psychoneurotic or hypochondriac, who exaggerates his disability. This factor must be borne in mind in management of these cases.

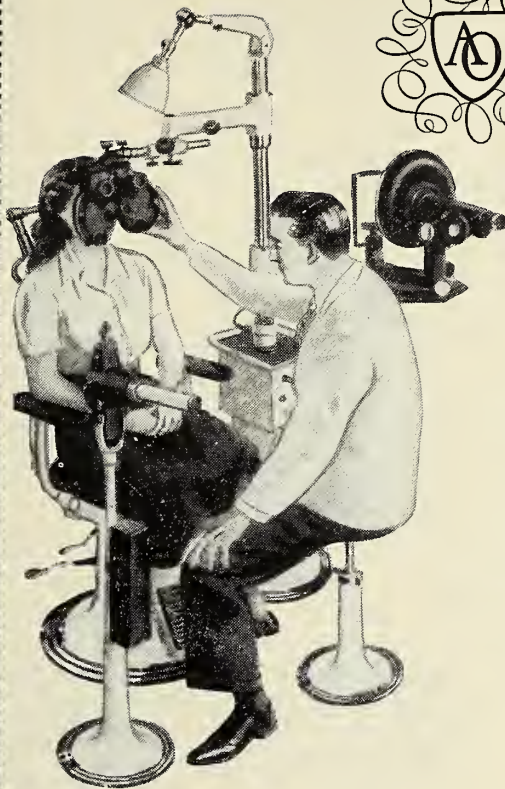
4. Diet. Dietary modifications and restrictions will be necessary for years, possibly for life. The degree of strictness will depend on the symptoms, such as duodenal deformity and degree of residual hyperacidity, and the personality of the individual.

5. Stimulants. Coffee not only increases gastric acidity, but sensitizes the stomach to other secretory stimulants. It should be eliminated. Alcohol stimulates gastric secretion and is contraindicated, at least on an empty stomach. Smoking should be curtailed or preferably stopped.

6. Infections. These, particularly respiratory infections, are notorious in initiating recurrence of peptic ulcer, and should be prevented or promptly treated.

7. Seasonal factors. The well-known tendency to recurrence in spring and fall may be associated with the increased incidence of respiratory infections at these seasons.

8. The human equation. Palmer is quoted: "The results depend on the patient—his willingness and ability to cooperate, and on the physician—his knowledge, personality, tact, enthusiasm, persistence,



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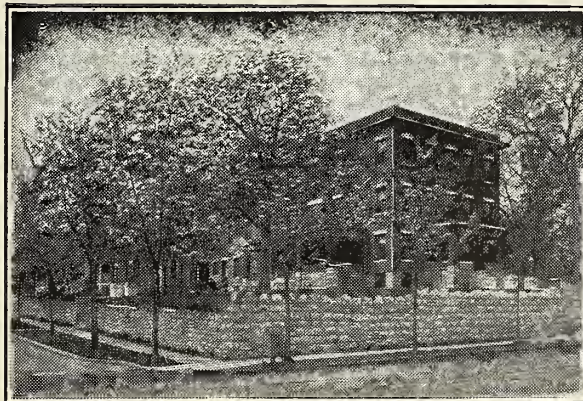
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resourcefulness, and painstaking care."

9. Prompt treatment of recurrent epigastric distress. Any recurrence of distress should lead to a prompt return to the first stage of ulcer management.

Only two surgical measures are considered of preventive value. One of these is subtotal gastrectomy. The mortality is under five per cent in expert hands. The end result is reported as good in about 90 per cent of cases, although Lahey reported 28 cases of massive hemorrhage in 100 patients subjected to the operation. Other complicating symptoms include nausea, anemia, weakness and weight loss.

Vagotomy, the other procedure, is relatively new, and apparently produces favorable results in about 90 per cent of patients. Complications after operation include diarrhea, gastric stasis with belching and vomiting, or intercostal neuralgia.

The indications for such surgical procedures are: true intractability of the ulcer on a strict medical regime in a hospital, frequent disabling recurrence in spite of adequate prophylactic regime, or unwillingness on the part of the patient to follow such a regime.—E. J. R.

* * *

Neonatal Deaths

Pathologic Findings in the Neonatal Period. By James B. Arey, *Jnl. Ped.*, 34-1, 44-48, Jan., 1949.

Five per cent of all deaths occur during the neonatal period, i.e. the first month of life. Adequate cause can be demonstrated in the majority of infants dying in this period. The material for this paper consisted of the consecutive autopsy records of 50 live-born infants dying on the Tulane Service of the Charity Hospital of Louisiana at New Orleans. Infants weighing less than 500 grams at the time of delivery were excluded. An adequate cause of death was demonstrated in 43 infants. Asphyxia was responsible for 10 deaths, intraventricular hemorrhage for 10, bronchopneumonia seven, congenital syphilis five, congenital anomalies four, and miscellaneous lesions seven. Of the 50 infants, some form of infection (bronchopneumonia, congenital syphilis, meningitis, or omphalitis) was present in 25, and in 14 infants this was considered the primary cause of death.—D.R.D.

* * *

Acute Subdeltoid Bursitis

Operative Treatment of Acute Subdeltoid Bursitis with Calcification. By P. O. Pelland and W. Hoffman, *Ind. Med.*, 18, 79-81, Feb., 1949.

Because of the rapid and permanent relief obtained with this method the authors feel that the operative treatment is the one of choice.

Two indications must be present for this operation to be performed successfully. The first is pain

which is severe, located just distal to the acromion process, and frequently radiating down the arm to the fingers; abduction and/or internal rotation of the arm are difficult or impossible. For the most part the onset is sudden and not related to any antecedent trauma. The second indication is the roentgenologic demonstration of calcification in the shoulder region.

Operative procedure may be done under local anesthesia but preferably under intravenous sodium pentothal. Patient is in the anatomic position of palms facing anteriorly and the elbow joint of the affected side flexed to about 90 degrees to facilitate rotation at the shoulder joint. The tendon of the long head of the biceps is palpated and a vertical incision two to three cm. long is made in the skin just lateral to the tendon and 2.5 cm. below the tip of the acromion process. The deltoid fibers are split and retracted until the roof of the bursa is exposed. The bursal root is incised longitudinally and its contents evacuated or washed out. When the bursa has been emptied, the tendinous cuff of the short rotator muscles is inspected by manipulating the bent elbow so as to rotate the shoulder. If any part of the cuff contains calcium, linear incision is made in the tendon over this plaque and in a direction parallel to the tendon fibers. This will cause the calcium to be extruded and the defect may be gently curetted or irrigated.

In closure, no attempt is made to suture any tendon fibers, bursa or deltoid muscle. One or two sutures of fine chromic catgut are placed through the fascia of the deltoid muscle and the skin is closed in routine fashion.

The patient is encouraged to move his arm as soon as he can. On discharge the day following operation he is instructed to carry out pendulum exercises frequently, using a weight or flatiron and allowing his arms to swing freely when he bends forward from the waist. The patient returns to work as soon as he wishes.

There were two failures in the series of 38 cases. The vast majority have been back at work after three or four days.—F.W.F.

* * *

Kansas Physician Writes Column

Dr. Glen R. Shepherd, Kansas City, who has been writing a column called "Medicine and Health" for the Kansas City Star during the past 18 months, has accepted an assignment for another column, "Take Care of Yourself," which will be distributed nationally by the Associated Press. Dr. Shepherd discontinued private practice when he began his medical column but has continued as an instructor in medicine at the University of Kansas School of Medicine.

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BOOK REVIEWS

Blakiston's New Gould Medical Dictionary, First Edition—Illustrated. Published by the Blakiston Company, Philadelphia, August, 1949. Price \$8.50.

This is a new, completely new, medical dictionary. The sub-title describes this as "a modern comprehensive dictionary of the terms used in all branches of medicine and allied sciences, including medical physics and chemistry, dentistry, pharmacy, nursing, veterinary medicine, zoology and botany, as well as medicolegal terms; with illustrations and tables."

Including the introduction, the dictionary has 1,322 pages. There are 252 illustrations, half in color, on 45 plates, all placed together between pages 544 and 545. In the appendix will be found 150 pages of tables covering anatomic features, arteries, bones, muscles, nerves, etc.; diets, elements, medical signs and symbols, phobias, vitamins, even veterinary doses and many other items.

An editorial board of six was assisted by 80 prominent physicians and scientists in completely revising and rewriting the classic Gould's Medical Dictionary. They have included all modern terms and drugs, such as aureomycin, and have striven for clarity of language and definition in all phrases.

By way of example, "penicillin" is given almost a half column of space. The pronunciation is given, the derivation of the word, the chemical formula, the definition, description, its uses and action upon the body.

Physicians will find Blakiston's New Gould Medical Dictionary useful for many reasons. It is modern and complete. The language is clear and concise. Pronunciations are easy to understand as for example, "anesthesia" which has a second spelling "anaesthesia" is given two pronunciations as follows (an"ess"thee'zhuh, zee"uh). Synonyms are included with the definition. Biographies and names are in the main text, thus avoiding the necessity of looking for separate alphabetical sections.

But most of all will the physician appreciate its mechanical conveniences. The type is clear and large enough to be easily read. Each separate entry is in bold-faced type and set apart into the margin. Related or component words are also in bold type, but not set out. "Cavity" for instance is in the margin in boldface. Under that are such subdivisions as "abdominal," "amniotic," "body," "brain" and 32 others all in black face but set even with the margin. Under each, of course, is its definition.

The book is highly recommended by medical authorities. It will be found to be practical and easily used. And it is complete—the first new, un-

ANNOUNCING THE NINETEENTH ANNUAL FALL CONFERENCE OF THE OKLAHOMA CITY CLINICAL SOCIETY—OCTOBER 24, 25, 26, 27, 1949 DISTINGUISHED GUEST LECTURERS

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General Endocrinology. By C. Donnell Turner, Ph.D. Published by W. B. Saunders Company, Philadelphia, 1948. 604 pages, 164 figures. Price \$6.75.

This book is well and clearly written. The facts presented are largely accurate and well authenticated by the imposing bibliography at the end of each chapter.

The book is written primarily from the point of view of the physiologist, or more exactly, the comparative anatomist and physiologist. From this viewpoint, the book is interesting and contains a wealth of information not found in texts on endocrinology. The review of endocrine function in plants and invertebrates is interesting, though largely of academic interest to the practicing physician.

After his introduction the author presents an interesting chapter on the biology of secretion. The bulk of the text is devoted to chapters on the commonly designated endocrine glands and structures, particular attention being paid to anatomy, physiology, and biochemistry. The closing portion deals with endocrine mechanisms in the invertebrates.

The author is associate professor of zoology at Northwestern University. As he states, this book is designed as a text for students who "are completing a field of concentration in zoology." It will, however, reward careful perusal by any physician primarily interested in endocrinology from the clinical point of view. It will increase the scope of his knowledge and inspire a greater appreciation for this young and growing branch of medical science.—*E.J.R.*

To Produce Compound E

Substantial quantities of desoxycholic acid, representing the annual yield from the bile of 200,000 cattle, will be supplied by Winthrop-Stearns, Inc.,

to Merck and Company under an arrangement recently concluded. The acid is the only presently available starting material for the production of Compound E, or cortisone, whose value in the treatment of arthritis was discovered at the Mayo Clinic.

Scientists in the laboratories of Sterling-Winthrop Research Institute have developed a synthetic process which considerably increases and makes more economical the production of the acid from ox bile. However, cortisone will continue to be in severely limited supply despite the expansion, as the amount planned for production will yield only 2,700 grams, enough for 27,000 patient days at a dosage of 100 milligrams per day.

"There can be little hope of the general availability of Compound E in the current state of scientific knowledge," said Dr. Theodore G. Klumpp, president of Winthrop-Stearns. "Present methods cannot produce enough starting material for even a small fraction of the demand for cortisone, because production is necessarily limited by the cattle population. Research must discover more widely available materials, or develop new processes, before relief from arthritis can be realized by the millions of sufferers."

Omaha Clinical Society Plans Program

The 17th annual assembly of the Omaha Mid-West Clinical Society will be held at the Hotel Paxton, Omaha, October 24-28, inclusive. Reservations may be made by addressing the secretary of the society at 1031 Medical Arts Building Omaha 2, Nebraska.

Scientific motion pictures will open the daily program, and a number of well known guest speakers will present scientific papers throughout the meeting. Round table luncheons, scientific exhibits on research problems and technical exhibits will also be included.

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Uterine Bleeding*

Robert J. Crossen, M.D.

St. Louis, Missouri

There are numerous outlines which could be used in discussing "gynecologic" bleeding, but the one I felt would be most helpful from the practical standpoint of caring for the patient is a division of the various causes of bleeding into the age groups in which they occur. Of course, in an outline of this kind, there is a good deal of overlapping as for instance, carcinoma may occur at any age but it is most common after 40 years of age.

General causes of bleeding, such as blood dyscrasias, are not included, but these should be kept in mind, and a complete blood count will not only help to rule them out but will also give us an index as to the amount of blood depletion present. Treatment is also determined to a certain degree by the age of the patient and the severity of the bleeding, so, with these general remarks, let us proceed to the age groups.

Bleeding may occur in an infant a few days after birth; this is due to a withdrawal of estrogen which the child was receiving from the mother through the placenta. The bleeding is of no significance and needs no treatment.

Bleeding occurring during early childhood, (three to six), always demands investigation. Gonococcal vaginitis is easily ruled out by a smear. Treatment of this condition need not be discussed nor does the treatment of foreign bodies which youngsters are prone to use in investigative expeditions. Examination with a Kelly endoscope will reveal these, as well as vaginal or cervical irritation or growths.

If the bleeding is recurrent resembling menses, and there are changes in the secondary sex organs suggestive of puberty, one would naturally suspect granulosa cell tumor of the ovary. These tumors secrete estrogen and, hence, cause development of the breasts, growth of pubic hair, and menstruation. Rectal examination may reveal an enlarged ovary, though frequently an adequate examination can only be done with the child under anesthesia. In cases

of doubt, observation with recheck examination is indicated. Novak has reported a large number of cases of physiologic early puberty, some occurring as early as six years. In none of these cases followed were tumors or other abnormal lesions found; hence, one must be reasonably sure that a tumor is present before operating to remove it. Granulosa cell tumor may occur at any time in life and must be considered in bleeding at any age. From puberty up to 20, functional uterine bleeding is the type which is most frequent.

Knowledge as to the cause of normal menstrual bleeding is still not complete. It is now generally understood that through some, as yet, unknown impulse, the anterior lobe of the pituitary gland begins to liberate its gonadotrophic hormone into the blood at or shortly after the onset of puberty. In children of both sexes between the ages of three and eight, estrogens are excreted in small amounts. In girls between the ages of eight to 11, the amount of estrogen excreted is increased, and, a year or two prior to the onset of puberty, the *intensity of secretion becomes cyclic*. When the amount of estrogen in the blood is of *sufficient magnitude*, the reduction phase causes a breaking down of the endometrium and withdrawal bleeding occurs. This is called anovulatory bleeding because the pituitary influence is not yet sufficient to induce maturation and release of the ovum. This type of bleeding may occur at any age but it is most frequently seen at the two ends of menstrual life; namely, puberty and the menopause, since *it is at these times*, that the ovulatory cycles are just *beginning*, or are in the process of *stopping*. Unless there is an abnormal loss of blood, no treatment is need, as the condition is corrected when the ovulatory mechanism begins to function.

The blood levels in the hormonal control of menstruation vary. At the start of the period the levels of estrogen and the pituitary gonadotropin are both low. The pituitary A increases rapidly in the blood, stimulating the granulosa cells of the follicle to secrete estrone. The estrone level rises

*Presented at the 90th annual session, Kansas Medical Society, May 9-12, 1949.

steadily and with ovulation there is a slight drop in the blood estrogen level. As this level increases with the development of the corpus luteum, it causes an inhibition to the production of pituitary A and B. By the 26th or 27th day of the cycle, the level of the pituitary hormones is reduced to such an extent due to estrone inhibition that they can no longer stimulate the corpus luteum, hence it dies, causing withdrawal from the blood of estrone and progesterone. This withdrawal of the ovarian hormones causes a shrinking of the endometrium and also initiates the vascular changes resulting in bleeding and the disintegration of the endometrium.

It now is recognized that the actual onset of the menstrual bleeding is due to changes in the spiral arterioles. The spiral arterioles arise from the arcuate branch of the uterine artery and run perpendicular to the endometrium between the endometrial glands. They are *end* arterioles and give off *no* branches after entering the endometrium. At their basal end they are surrounded by a cone of muscle fibers. These fibers have the power of constricting the spiral arterioles and they are under hormonal control, being affected by estrogens, progesterone and testosterone. Through the work of Markee in the monkey, later confirmed by hysteroscopic study in women, the following changes were found to occur: during the first three weeks of the menstrual cycle there is an alternate contraction and relaxation of these arterioles, causing alternate blanching and bleeding of the endometrium. During the premenstrual stage the blood flow through the arterioles is slowed and endometrium becomes paler. With the withdrawal of estrone and progesterone, 24 to 36 hours before menstruation, there is a loss of fluid in the endometrium causing it to shrink. This causes increased coiling of the arterioles and slows the blood flow in them markedly. Through the action of some unknown toxic vasomotor substance caused by the stagnation of blood, the cones clamp down, stopping the blood flow completely, and within from four to 24 hours subepithelial hematomas appear in the endometrium and these gradually coalesce and rupture through into the uterine cavity. The endometrium is then cast off down to its basal layer. New glands and arterioles develop with the new endometrium.

In order to understand the rationale of estrogen, progesterone and testosterone therapy in uterine bleeding, certain other effects of these hormones must be understood. Experimental work in monkeys has shown that when a monkey is castrated withdrawal bleeding occurs in approximately nine days. If then 400 units of estrogen is given daily for 14 days and then stopped, bleeding again occurs in from nine to 16 days. If on the 14th day the dose is dropped to less than 250 units daily, bleeding occurs

in from nine to 14 days, in spite of continued estrogen administration. If the dose is kept above 250 units after the 14th day, bleeding is inhibited. From these experiments it is evident that there is an estrogen threshold in castrated monkeys above which bleeding will be prevented and below which bleeding will occur. If progesterone is given, and then withdrawn, bleeding occurs within from two to four days, a much shorter *latent* period than that of estrogen. Estrogen withdrawal bleeding can be inhibited by progesterone indefinitely, whereas, after withdrawal of progesterone, bleeding will invariably occur even though large doses of estrogen are given, in an attempt to prevent bleeding. Testosterone has qualities similar to both of the ovarian hormones. In an endometrium previously primed by estrogen, the testosterone exerts a proliferative effect, while on a secretory endometrium, testosterone maintains this secretory phase. The latent bleeding period for testosterone withdrawal is from 15 to 25 days.

So much for the known facts concerning uterine bleeding, normal and abnormal. Now, how do these apply in the treatment of the patient with uterine bleeding due to endocrine dysfunction?

The bleeding may be caused by abnormal activity of any of the endocrine glands concerned with pelvic function: pituitary, thyroid, ovaries and, probably, the adrenal. If diseases of the pituitary and adrenal cortex are ruled out, and the thyroid function is brought up to normal, then by elimination one can assume that the disorder is one of imbalance of the ovarian hormones. As mentioned earlier, the primary cause may be due either to excess of estrogen, or a deficiency of the corpus luteum.

First, I will discuss the use of estrogen substances in treatment. In view of the observation that excessive estrogen can cause endometrial hyperplasia and bleeding, it is not clear why the administration of estrogens stops bleeding. The effect of large doses is too prompt to allow for inhibition of the pituitary and, hence, it is thought to be due to a direct action on the coiled arterioles. Hamblen has long been an advocate of estrogenic therapy. He uses either stilbestrol or, if the patient cannot take this, estrone sulphate. This latter is derived from the urine of pregnant animals and goes under the trade name of Premarin. The first step in the treatment is to stop the bleeding, and this is accomplished by giving diethylstilbestrol, six mg., or estrone sulphate, 7.5 mg., daily. The bleeding usually will stop within five days, but if it does not the dose is increased from 25 to 100 per cent. The required daily dose is then continued for 20 days, or until the bleeding occurs, and then the therapy is discontinued for five days. The dose is then reduced 50 per cent and the cyclic therapy (fifth to the 20th day) is continued for three periods, when a premenstrual biopsy is

done to determine whether a progestational endometrium has been formed. The cyclic therapy as outlined sometimes helps to promote normal pituitary action. If there are no progestational endometrial changes it is evident that ovulation has not occurred, so attempts are then made to cause ovulation by administration of P.M.S. and chorionic gonadotropin. The former is given 20 units from the fifth to the 12th day and the latter 500 units from the 12th to the 20th day. If, after several trials, a premenstrual endometrium is not obtained the ovaries are judged refractory.

The second sex sterol used in anovulatory bleeding is progesterone. Fifteen years ago, Novak, in discussing anovulatory bleeding, stated that the hyperplasia of the endometrium and the bleeding were due to the lack of the corpus luteum hormone, and he advised the use of the oily extract of the corpus luteum then on the market. In 1930, I had a difficult case of the type of bleeding in a young girl in whom this type of therapy was the only one to which she responded. Willard Allen and others have reported satisfactory results in 50 per cent of cases using progesterone. To stop the bleeding 10 mg. is given intramuscularly daily for six days and then stopped. A period usually followed cessation of the therapy within 48 hours, and lasted from five to six days. This was probably caused by progestin-deprivation and resulted in breakdown and a casting off of the endometrium as occurs with true menstruation, so, this in itself is beneficial, especially in cases having a hyperplastic endometrium. In one-third of the cases treated by Allen normal menses ensued and these continued for many months, in the second third abnormal bleeding recurred within four months, and in the remaining third a long period of amenorrhea occurred. When anhydrohydroxy progesterone was given by mouth, total doses of from 180 to 600 mg. were required to control the bleeding. G. E. Jones and Te Linde, in the American Journal of Obstetrics and Gynecology, May 1949, also reported good results with oral progesterone therapy. In 1943 the Ciba company supplied me with a new product, progesterone, which can be given sublingually thereby avoiding partial destruction of the product by the gastric secretions.

As a trial, I used this preparation in eight cases of persistent anovulatory bleeding. Six were relieved markedly but needed repetition of therapy occasionally; in one, the relief was temporary, and one was a complete failure. Ten mg. were given twice daily for from a week to 10 days before the period. Since then results have continued to be good. Recently Allen has been using this preparation giving 20 mg. daily for six days with good results.

From a physiologic standpoint the logical treatment for anovulatory bleeding would be adminis-

tration of the pituitary hormones in order to cause ovulation and corpus luteum formation. Although Davis and Koff have accomplished this in normally ovulating women with pregnant mare serum, it has not been successful in women having anovulatory cycles. The urinary gonadotropin according to the work of Hamblen and Geist does not cause ovulation in the human but does destroy persistent follicles, and it is probably through this latter action that the excess estrogen is diminished and in this way the bleeding is controlled. With this type of therapy from 200 to 500 units are given daily until the bleeding is controlled, and if it is not controlled after eight doses some other type of treatment is indicated.

Abarbanel obtained good results using the male hormone testosterone. A dose of 25 mg. intramuscularly was given as the initial dose, then the same dose was given subcutaneously until the bleeding stopped. With succeeding periods from five to 10 mg. were given three times a week. Its action is both indirect, through inhibition of the pituitary, and direct on the coiled arterioles. If masculinization effects are noted, treatment should be discontinued.

In some cases curettage is indicated as an emergency measure. It is also an excellent therapeutic measure and should be used if hormone therapy does not help. In a few refractory cases of this type, I have used 200 to 500 mg. of radium with good results.

In the age group 20 to 35 we must consider abnormal pregnancy, pelvic infection and ovarian cysts, cervicitis, and polyps. Threatened abortion is best treated by rest and Stilbestrol 20 to 100 mgs. per day.

The diagnosis and treatment of ectopic pregnancy is familiar to all of you and I shall not attempt a comprehensive discussion here. A few points, however, are worthy of mention. These patients should not be examined under anesthesia unless in the operating room prepared for abdominal section with plenty of blood available, as the tube is frequently ruptured at this time. Cul-de-sac puncture may be misleading as it is positive only if there is already leakage of blood into the cul-de-sac. If there is much uterine bleeding and the diagnosis is in doubt, a careful, gentle, curettage will give a positive diagnosis, for a decidual endometrium is found *with no* chorionic villi, or a decidual cast may be obtained.

With incomplete abortion, *especially if infected*, the work of T. K. Brown has proved conclusively that the best treatment is gentle removal of any tissue present by means of a sponge forcep followed by an intrauterine douche of 1.1000 KMNO₄, two liters at 110 F. with 50 cc. of N/1 sulfuric acid. Most of these infections are due to anaerobic streptococcus which multiply in the retained tissue, and the con-

dition is not relieved until this material is removed. The newer antibiotics help post-operatively but are not very effective against the anaerobic streptococcus. Dr. Brown reported 1,776 cases of abortion treated in this way with an average hospital stay of 5.9 days.

Ovarian cysts are frequently accompanied by menstrual disturbances. In some cases multiple follicle cystic ovaries are present. Removal of the necessary offender or plastic operation will usually give relief. When abdominal operation is necessary, it should be accompanied by curettage, as a hyperplastic endometrium frequently accompanies these ovarian lesions and the curettage is therapeutic as well as diagnostic.

From the middle thirties on, one of the most frequent causes of bleeding is myomata of the uterus. With submucous or pedunculated myomas, bleeding occurs early when the growth is still small. When the tumor is intramural, it may become quite large before the abnormal bleeding causes the patient to seek medical advice. At first the menses are more profuse, then they gradually become prolonged, and eventually the interval between the periods is shortened. With the frequently recurring loss of excessive amounts of blood, a secondary anemia results and the patient becomes *weak* with the period and is exhausted even *between* periods, for her blood-making organs cannot keep pace with that lost at menses. Treatment depends on the age of the patient and the degree of blood loss.

In younger patients, under 40, conservative measures should be tried. Iron is given to make up the blood loss; ergotrate, one tablet twice daily for three days, by stimulating uterine tone, helps to cut the amount lost. At this point, I would like to mention another preparation which, over the years, we have found very helpful in reducing the blood loss in *many* of these cases, namely, Mammory substance. Its use is based entirely upon the results noted clinically over 30 years and, so far as I have been able to determine, there is no experimental support for its use. Because most pharmacologists consider it of little or no value, most of the large drug companies have discontinued its manufacture and it is difficult to obtain. My skepticism as to its efficacy was dissipated after a controlled trial in patients. The five-grain emplet given twice daily throughout the month will, in many cases, reduce the blood loss and prolong the interval between periods.

In the past few years, several articles have been published on the use of Testosterone or Progesterone in cases of myoma. This was based on experimental work of Nelson and, later, Lipshitz and Vargas. They produced fibroid-like tumors throughout the bodies of guinea pigs by prolonged injection of estrogens. These tumors could be made to disappear by the ad-

ministration of Testosterone or Progesterone. These tumors are not the same as myoma, although there are some analogies. Clinically, the use of these hormones causes some improvement, but on discontinuing treatment the condition recurs. Since the results with these *expensive* hormones are *no better* than those with Mammory emplets, I will continue to use this less expensive and more successful therapy. If the patient does not respond to this conservative treatment, curettage is indicated. This will remove the hyperplastic endometrium or polyps present and will aid in detecting submucous myomata. If, in spite of this conservative treatment, (excessive) bleeding continues, surgical treatment is indicated and the type depends upon the number and location of the tumors.

If it is important to preserve the childbearing function, myomectomy is preferred even at the risk of the necessity of hysterectomy later. If childbearing is not to be considered, a high hysterectomy with preservation of menstruation, if possible, is preferable in younger patients. A complete hysterectomy is advisable in patients nearing 40 years of age.

In patients over 40, when preservation of ovarian function is not so important, we have a choice of radiation or surgery. Suitable cases for radiation are patients with a tumor under the size of a three months' pregnancy whose only symptom is bleeding. Treatment of larger tumors or those having pain or other conditions in the pelvis needing operation are best handled by surgery. Of course, this advice is varied to meet the individual case. In some cases with large tumors, where operation is contraindicated because of some general condition or because the patient refuses operation, radiation can be used.

In 1947, I reported our results in over 500 cases of myomata treated by radiation. In 90 per cent of the patients, it was successful in stopping the myoma activity and symptoms. The question of future malignancy was investigated and it was found that uterine malignancy and ovarian malignancy was twice as frequent in non-radiated myomata as in those cases receiving radiation.

In most cases around 42, if the patient is a good operative risk, complete hysterectomy and bilateral salpingo-oophorectomy is advised, for in this way we get rid of the involving organs, uterus, cervix, and ovaries, which may give serious trouble later; but it is well to keep in mind that radiation is an excellent method of treatment for those who, for some reason, are not suitable for operation.

Finally we have the group past 45, and in this group malignancy must always be kept in the foreground; as you know, from 40 to 50, cervical carcinomas are most common. Endometrial or fundus carcinoma is more common after 50. The need for alertness on the part of the general practitioner who

usually is the first to see the patient and the methods of early detection, I have discussed in detail in my previous talk.* Eradication of cervicitis as the most potent preventive measure has also been stressed, so I shall limit the present discussion to a brief statement of the present status of therapy. In the continuing search for a cure through the years, treatment has gone through the phases of the Wertheim or Schauta operation, to radiation. Radiation therapy has been constantly improving due to two factors: namely, increased potency of x-ray therapy and a new method of application with the vaginal route, and second, better distribution of the radium.

In view of the recent improvements in surgery, certain workers are testing again the effectiveness of surgery. Taussig, on the assumption that radiation did not affect the lymph glands, tried radiation plus lymphectomy and in 70 patients reported a 38 per cent five-year survival. Morton, in a more recent series, found that in patients receiving radiation, 11 per cent of the glands were involved, while in those not receiving radiation, 39 per cent had gland involvement. He concluded that since the glands are affected by radiation, operation is not necessary.

Meigs has been the main exponent of the radical operation, and he has demonstrated that the operative mortality can be very low. He states, however, that long training in this very special technique is required. We are awaiting the five-year reports from his clinic with interest, but at the present time the concensus of opinion among leaders in the field of gynecology is that all cases of cervical carcinoma should receive the benefit of radiation and any operative work should supplement rather than supplant it.

Heyman, who has seen 6,200 women with cervical carcinoma in the past 34 years, states that 65 to 80 per cent of women in Group I and II are cured with radiation therapy without risk of a serious abdominal operation and there is no comparable series of surgical cases with a cure rate above it.

Carcinoma of the *fundus* is most commonly found in women past 50 years and any case in which there is a recurrence of bleeding after the menopause should have a diagnostic curettage unless there is some evident cause for the bleeding such as polyps or senile vaginitis. In a series of cases reported by Crossen and Hobbs, late menopause, i.e., prolongation of the periods past 50, has been shown to occur four times more frequently in fundal carcinoma than it does in normal women. This fact has led me to advise stopping the menses in most cases who continue to menstruate past 50, for evidence points to the fact that the stimulation of the endometrium

by estrogens, in this instance, endogenous at this period of life when this membrane is supposed to be atrophic, is a factor in the development of endometrial carcinoma. Treatment for this condition has also undergone change. At present, most gynecologists advise x-ray and radium treatment followed by hysterectomy, complete, and bilateral salpingo-oophorectomy. Two other conditions which cause bleeding at this age are senile vaginitis and the injudicious use of estrogens. Senile vaginitis occurs in elderly women in whom the protective, thick, epithelium seen during the period of menstrual life is absent. The vagina at this age is usually lined by a single layer of epithelial cells, and this is but poor protection against even the ordinary bacteria which may enter the vagina. Even slight trauma may injure this delicate lining, causing spotting to occur.

Examination reveals a reddened vaginal surface, and in cases of long standing adhesions may have formed between the abraded surface, causing them to become adherent. The general treatment should be directed toward improving the patient's general health by well-balanced diet, high in iron. Simpson and Mason in a series of 50 patients, found that the diet was very low in Vitamin A, or, in some, the diet was *adequate* in this *vitamin*, but the patients were taking *mineral oil* which prevented its proper absorption. This was corrected by having the patients take 16 cc. of cod liver oil t.i.d. for a week and then four cc. daily until cured, which usually took two months. If the patient cannot take cod liver oil, 125,000 units of Vitamin A can be given in capsule form.

The specific treatment consists in building up the epithelial lining by giving estrogens either locally in vaginal suppositories or by mouth. A 2,000-unit suppository is inserted in the vagina every other day for two weeks, then once a week for two more weeks. The vaginal pH is adjusted by the use of some acid jelly or a weak acid douche. If there is much infection present, it may be necessary to use sulphajelly or merpectojel. After the case is cured, the vaginal wall can usually be kept in good condition by a weekly douche of white vinegar (one tablespoonful to a quart of warm water) or 1/2 teaspoonful of lactic acid to two quarts of water.

My final remarks are directed to the therapy of the menopause. The indiscriminate use of the ovarian hormones, even to the extent of giving ovarian hormones to any woman past 40 in order to avoid the menopausal symptoms, has led to a great deal of confusion because of the bleeding it frequently causes. Engle, whose original work on the estrogens is well known, in a large menopause clinic found that best results are obtained by thyroid and pheno-

*See "Office Gynecology," Jrl. Ks. Med. Soc., 50:8, 373-378.

barbital. The only cases in which estrogens were used were those having hot flashes. When estrogens were used, small doses of Stilbestrol, 0.25 or 0.50, were given orally.

Basal Metabolism and Hypothyroidism

Donald P. Trees, M.D.

Wichita, Kansas*

There has been so much utter confusion concerning basal metabolism that there is need for some further attempt at clarification, particularly in cases with low basal metabolic rates. Physicians have practiced the two extremes. Some have refused to use the machine under any circumstances, others have considered every patient with a low B.M.R. as being a hypothyroid. Others, when getting repeated low basals on their nervous, underweight individuals, have told patients the thyroid gland was alright but the tests were off. With such variance in results from B.M.R., further evaluation from a laboratory and clinical standpoint is essential.

The acceptance of a normal standard for B.M.R. variation is a case in point. The standard of a -10 to $+10$ being within normal limits is seriously questioned. It should be pointed out again that all errors of technique including the patient, machine, and operator, tend to affect the result in a plus direction. Thus a -10 B.M.R. is suggestive, while a $+20$ may be of no consequence. This statement finds agreement with Hodge¹³ and Harrell.¹⁴ The only exception to this rule are some drugs which may actually lower a patient's basal metabolism. According to Duncan,¹ these drugs are morphine, heroin, chloral hydrate, barbital, ipral, neonal, nirvanal, thouracil, and allied preparations.

One of the most accurate determinations of thyroid activity is the serum precipitable iodine content. Since this test is not practical at the present writing, the correlation of the B.M.R. with the serum cholesterol is of great value in determining the patient's status. This relationship is nothing new; but to my experience it is not general knowledge to many practicing physicians.

Serum cholesterol determinations have great variations in normal people and one cannot be dogmatic about specific levels. It is likewise essential that the technician run frequent cholesterol determinations if the levels are to be of any value at all. The levels of cholesterol herein considered of significance are much lower than those generally considered of value. However, in only one case of this series was the cholesterol completely out of line with the clinical picture. In three cases of severe myxedema the cholesterol was never over 380.

This series of cases was arbitrarily set at the first

100 cases, as a cross section of patients coming to the attention of a practicing physician—all showed a B.M.R. of -10 or lower. The statistics, while not conclusive, do give information as to general trends. The classification of these cases as seen in Table II was primarily made on clinical grounds and response to thyroid therapy. None of the non-hypothyroid group, with few exceptions, required more than gr. one thyroid daily. This does not agree with Dunlap⁵ who feels that "secondary hypothyroidism" requires more thyroid than true hypothyroidism. The majority of true hypothyroids required two to three gr. of thyroid daily. It is obvious, with the complicated integration of all the glandular systems of the body, that some of these cases listed as true hypothyroids may actually be admixtures of pituitary, adrenal, or gonadal deficiencies and not primarily hypothyroidism at all.

All cases in this series were followed with re-

TABLE I*

- I Basal Metabolism Readings -10 to -40
 - A. Cholesterol Increased Moderate to Severe (over 250)
 - 1. Hypothyroidism (severe)
 - 2. Cretinism
 - 3. Chronic Thyroiditis
 - 4. Nephrosis
 - 5. Hypopituitarism (Simon's Disease)
 - 6. Hypo-adrenalism (Addison's Disease)
 - B. Cholesterol Slightly Increased (220-250)
 - 1. Any of group A in mild form.
 - C. Cholesterol Normal or Below Normal (below 220) N.N.L. Group
 - 1. Under Nutrition (starvation)
 - 2. Anorexia Nervosa (Neurosis)
 - 3. Shock
 - 4. Anemia
 - a. Acute hemorrhage (normal cholesterol)
 - b. Chronic hemorrhage (low cholesterol)
 - 5. Liver Dysfunction
 - a. Parenchymatous or degenerative (causing early loss of appetite and mild nausea)
 - 6. Obesity: B.M.R. to -15 , Cholesterol Normal

Note. This table was compiled extensively from the work of Duncan and also Bodansky & Bodansky (see bibliography) plus additions of this author.

* From the Wichita Foundation of Medical Research.

peated B.M.R. and cholesterol. Improvement was determined when laboratory tests showed return to normal with thyroid therapy, and clinical changes were definite. Only one brand of thyroid was used. This brand was one-half stronger than U.S.P. thyroid.

In this paper, emphasis should be given to the large group of mild hypothyroids who are most often overlooked, and also the large group of non-thyroid cases which are termed the N.N.L. (Neurotic, Nutrition, Liver) group which clinically are indistinguishable from the mild hypothyroids. There is also a confusion between hypothyroids and toxic thyroids.

This N.N.L. group included two extremes: (1) The thin nervous individuals bordering on anorexia nervosa; (2) The overweight sluggish individual whose emotional instability results in overeating and obesity.

Since the true hypothyroids have the same subjective symptoms as the N.N.L. group, they are most often relegated to the latter group without further evaluation. Many of these unfortunate individuals, usually young women, have shopped from physician to physician with a universal prescription of phenobarbital. In my hands without phenobarbital and only physiotherapy of gr. one of thyroid daily, they have made a grateful and complete recovery. In all fairness it must be stated that all of the N.N.L. group have also universally made definite clinical improvements on the same therapy, small doses of thyroid. Fourteen cases of the N.N.L. group out of 55 would make prize collections for any psychiatrist's practice. Some of the neurotics were so nervous that four to five graphs had to be run and yet the basal readings were -20 to -30 .

Also included in the N.N.L. group are four cases of proven mild, chronic, sub icteric hepatitis. All four were thin, nervous, underweight individuals. Their basals ranged from -11 to -19 and cholesterol from 183 to 217. All four showed marked improvement on small doses of thyroid. Their nervous manifestations are of particular interest in the light of present knowledge concerning the association of nervous and neurotic tendencies in liver disease. Only by careful observation and astute investigation can the physician determine whether the primary condition was hepatitis causing loss of appetite and malnutrition, or a primary neurosis causing malnutrition and indirectly liver dysfunction.

TABLE II

100 Cases	Male	Female	Total
Mild Hypothyroids	7	21	28
Severe Hypothyroids	3	10	13
N.N.L.			
(Nutritional, Liver, Neurotic)	2	2	4
	9	46	55

A. S. Blumgarten¹⁵ in 1931 reported five cases of low B.M.R. which were not hypothyroids. His description of these cases fits them beautifully into the N.N.L. group described above. The B.M.R.'s in his report were -20 , -14 , -13 , -13 , -16 respectively. Three of the cases reported cholesterol as follows: 137, 141, and 172. His diagnoses were autonomic imbalance and constitutional asthenia. It was also his opinion that thyroid medication made these patients worse. However, he made no mention of dosage or time interval in his therapy.

Certainly in this series of cases the combination of a low basal metabolism coupled with a low cholesterol has in most instances pointed the finger to a primary functional disability. The sequence of events seems to be: neurosis, bringing about malnutrition, which in turn on occasions causes mild liver dysfunction.

The improvement in the N.N.L. group has been attributed to improved nutrition brought about by a definite increased appetite from the thyroid therapy. Improvement in this group was based on return of B.M.R. to the plus side, reorganization of weight, and clinical disappearance of original complaint and symptoms.

Differentiation between hypothyroid and hyperthyroid is often difficult, as noted by Russell.⁷ Some low thyroids show nervousness, loss of weight, weakness, rapid pulse, along with a nodular or enlarged gland. Here a serum cholesterol is exceedingly helpful. In going back over these cases it has been appalling to note the frequency in which the initial clinical impression was hyperthyroidism: but the B.M.R. continued to be minus, the cholesterol high, and the patient became well on thyroid medication. This particular situation would explain to the surgeon many of the cases of "toxic goiter" which clinically did not seem to improve much after operation.

A case in point is that of a 35-year-old female. This lady had consulted two physicians who on separate occasions had advised operation for a toxic

TABLE III

Complaints	Hypothyroidism		N.N.L. Group	
	Chief Complaint	Secondary Complaint	Chief Complaint	Secondary Complaint
Weakness and Lassitude	13	8	15	14
Headache	4	6	7	6
Muscular Aches	4	1	1	5
Precordial Pain	1	2	4	4
Nervous—Tense	8	9	22	8
Loss of Appetite	0	1	2	1
Overweight	5	6	6	7
Menstrual Irregularity	1	3	1	9
Constipation	0	5	0	4
Anemia	1	1	0	2
High Blood Pressure	4	2	0	0
Stomach Distress	0	5	1	3

nodular goiter, without benefit of laboratory tests. She was inherently afraid of an operation, and having heard that x-ray could be used for "goiter" sought the aid of an "x-ray man." He had turned her down.

The patient's chief complaint was a "goiter." About two years previous she had started to lose weight and became extremely nervous. She had noticed some shortness of breath on one flight of stairs, and occasional precordial pain with "fluttering of her heart." Although her appetite was "too good" she had lost 10 pounds the past year.

Shortly after the onset of these symptoms the patient noticed a "lump" in her throat, and difficulty in swallowing because of a sensation of pressure in her throat. All of these symptoms persisted to the time of her coming under surveillance in October, 1947.

Physical examination showed a thin, underweight, obviously nervous woman. Blood pressure was 150/90, pulse 100/minute. There was a firm lump the size of a pecan in left lower pole of the thyroid gland. The tongue showed a fine tremor, as did the hands. There was no exophthalmus. Heart sounds were regular, but labored. No murmurs were heard. The clinical impression was a toxic nodular goiter. There was ready agreement with previous opinions until the laboratory reports came back. B.M.R. was a -32 and serum cholesterol was 380. The tests were rechecked and substantiated.

A mental reverse therapeutically was made and the patient started on gr. one of thyroid.

Two weeks after start of medication patient had gained three pounds in weight. Nervousness was considerably better. B.P. was 120/80.

Nine months after start of medication, patient gained 6½ pounds, nervousness had completely disappeared, and laboratory tests were within normal range. She now has only occasional slight sensations in throat, none of the previous choking, all of this in spite of the fact that the nodule in the thyroid is still present and the same in size.

The patient has been advised of the possibility of malignant changes in her gland, but still refuses any surgical intervention.

Therapy in all cases was instituted as follows: patient was started on thyroid gr. ½ or gr. one daily. After six weeks to eight weeks laboratory tests were repeated and thyroid increased ½ to one gr. accordingly. Another two months were allowed to pass, tests were repeated and thyroid dosage adjusted. In only two cases was more than gr. 111 of thyroid daily required to maintain clinical well being and laboratory tests within normal range. These two

exceptions were obviously suffering from polyglandular deficiency.

With this method of gradual increase of thyroid medication no individual experienced any severe side reactions, only a few had mild reactions and none developed a fear of his medication. It was noted that if the patient volunteered that in the first 10 days of medication, or the start of an increased dosage, he had noted marked improvement and then seemed to slip backwards, he was not receiving enough thyroid.

However, after reaching a standardization of thyroid dosage, in the true hypothyroids, they have maintained equilibrium in the three years they have been followed. In some few who have arbitrarily stopped their thyroid with return symptoms, the exact same dose gradually instituted has returned them to the previous status. With the N.N.L. group requirements vary sporadically and their B.M.R.'s respond rapidly to small doses of thyroid.

Summary

1. Serum cholesterol is a valuable adjunct along with basal metabolism in determining thyroid status, particularly hypothyroid.
2. A low B.M.R. and serum cholesterol should alert the physician to a primary diagnosis of neurosis.
3. A combination of low B.M.R. and serum cholesterol may point the finger to a true low grade hepatitis, which might well otherwise go undetected.
4. A low B.M.R. with low serum cholesterol suggests poor nutritional status or liver dysfunction. This should be of value, in selected cases, to the surgeon in his preoperative evaluation and preparation of a patient.
5. Mild hypothyroid states are often confused with neurosis.
6. Hypothyroidism is frequently confused with toxic goiter, undoubtedly causing some few patients to have "burnt out thyroids" removed by surgery.

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Malignant Tumors of the Accessory Nasal Sinuses

Galen M. Tice, M.D.

Kansas City, Kansas

and

Willis L. Beller, M.D.

Topeka, Kansas

A discussion of this subject concerns itself primarily with epithelial tumors, the majority of which arise in the maxillary antra with only an occasional one originating from the other paranasal cells. The mucosal lining of these structures is of a ciliated columnar type of epithelium which Ewing refers to as the "Schneiderian membrane." It is immediately questioned why the majority of the primary epithelial tumors arising from this location should be squamous cell carcinomas. The answer to this lies in the fact that this type of epithelium readily undergoes metaplasia particularly when neoplastic changes are involved. This is true in the bronchial epithelium as well, where primary bronchial tumors are found.

It is said by some that the chronic infections so frequently encountered in this region are responsible for the metaplasia which occurs where a primary epithelial neoplasm is concerned. A second explanation, and one that some authors consider more plausible, is that the squamous cell carcinoma actually arises from an island of congenitally misplaced squamous epithelium in the paranasal cells which they say is a frequent occurrence. Be that as it may, the fact remains that in all series of neoplasms in this site squamous cell carcinoma constitutes from 60 to 70 per cent of the primary tumors. In our series 66 per cent of the tumors were epidermoid carcinomas.

Ewing discusses the carcinomas which arise from the mucosal lining of the maxillary antrum under the principal headings of (1) epidermoid and squamous carcinomas (2) malignant papillomas and (3) papillary and alveolar types of glandular carcinoma. In addition to these main groups Willis describes carcinoma of the so-called basal cell type and then presents evidence to support the idea that most of these tumors are actually adamantinomas.

In addition to the primary epithelial tumors one not infrequently encounters a lymphoepithelioma which has apparently arisen from the paranasal sinuses. We have included three cases of the latter in our series. Less frequently one sees tumors arising from the bone or periosteum of this area and occasionally various combinations of cell types such as angiosarcoma or angiofibrosarcoma, myxosarcoma and even chondrosarcoma are seen.

The differential diagnosis of tumors of this area must, of course, include such benign tumors as giant cell tumor of bone, osteomas, chondromas, myxomas, fibro-osteomas, adamantinomas, dentigerous cysts or simple dental cysts. Inflammatory conditions may produce the same type of pain, neuralgia, paresthesias, nasal discharge, epistaxis or early roentgen changes and except for the absence of the degree of tumefaction and the actual bone destruction demonstrated roentgenographically the symptoms and signs may be the same as with a primary malignant tumor. The final diagnosis may have to wait on histological study.

Biopsy can frequently be obtained from the intra-nasal or intra-oral extension of the tumor or in early cases by aspiration biopsy or from tissue removed at antrotomy when a Caldwell-Luc operation is performed and the antrum actually curetted.

Then one encounters a variety of secondary tumors involving the antrum or ethmoids from adjacent structures. Often an extensive neoplasm is found involving the alveolar ridge, buccal mucosa, hard palate, soft palate and nasopharynx, as well as the antrum often causing considerable bone destruction in the maxillary and malar bones and it is impossible with any degree of accuracy to identify the point of origin of the tumor. Less often one can be quite certain that the tumor has arisen in the nasopharynx, naris, or overlying skin, perhaps, and has secondarily involved the maxillary antrum.

Incidence and Etiology. The disease is primarily the old man's disease. Most series record about 80 per cent occurrence in males and an average age of between 50 and 60 years. Seventy-two per cent of our cases were males and they possessed an average age of 57 years. The extremes were 12 and 84 years. Many of our patients were the quite aged—above 75 years—and thus the life expectancy was necessarily quite short. A young age, of course, does not exclude the possibility of a primary malignancy. Our youngest case was a boy of 12 years with an osteogenic sarcoma of the maxilla. We also have recorded an undifferentiated carcinoma arising in the antrum of a girl of 14 years and an angiofibrosarcoma in a boy of 16 years. It is not an uncommon tumor, accounting for about one per cent of all tumors at Memorial Hospital, according to Ewing.

There is now little if any good evidence to indicate that chronic sinusitis has any causative effect in the development of carcinoma of these sinuses. Ringertz states that 30 per cent of all cases of carcinoma of the nasopharynx (55 per cent with cylindrical cell carcinoma) are associated with polyposis. Indeed, many rhinologists recommend antrotomy for every case of antral polyp (Moore).

Diagnosis. The diagnosis unfortunately is seldom made early. Most of our patients when first seen had nasal discharge, nasal obstruction, pain and tumefaction. Many of them had edema of the face and eye with a moderate degree of proptosis. The pain is usually moderately severe. If the lesion involves primarily the floor of the antrum the symptoms may be toothache, neuralgia or a tumefaction presenting near the gingiva and the patient first seeks dental advice. Not infrequently the patient will have had one or many extractions some weeks or months before the tumefaction becomes large enough or the pain severe enough so that the patient or his dentist recognized the greater seriousness of the disease. By this time the extent of the lesion and history of its onset leaves little doubt as to the nature of the lesion and it remains only to decide the point of origin and the cell type involved.

In less advanced and less obvious lesions roentgenograms are of material value in an evaluation of antral disease. Early antral carcinoma will produce only a clouding of the sinus which in itself is not diagnostic of a neoplasm. Pfahler recommends opaque oil instillation where, when present, a carcinoma will manifest itself by an irregular filling defect involving only a part of the sinus. This is in contrast to the smooth defect of a polyp, a mucocele or the general constriction of a hyperplastic sinusitis, any of which might produce the same clouding of the sinus.

In more advanced lesions, of course, the presence of bone destruction is, if one rules out osteomyelitis, pathognomonic of malignancy. This means that the disease is more advanced and renders the prognosis much less hopeful. Eighty per cent of our patients showed bone destruction when they first came under our observation. One hundred per cent of the cases showed definite changes in the roentgenograms but in 20 per cent the changes were not diagnostic. Watson, in a group of 127 cases of carcinoma of the paranasal sinuses, found that 96 per cent of the cases showed bone destruction on admission radiographs.

Treatment. In the last century Gensoul introduced the operative procedure consisting of radical excision of the superior maxilla in the treatment of carcinoma of the antrum and adjacent areas. This

procedure carried a very high mortality rate in the hands of all but a very few. The operation was usually delayed because of the extent and seriousness of the procedure until there could be no doubt as to the diagnosis and surely fatal outcome of the disease process. Less radical surgical removal almost without exception met with failure. The radical procedure gradually fell into disrepute, however, due to the fact, as Faure stated it, "when the operation is justified it is impractical and when it is practical it is unsatisfactory." In 1920 New of the Mayo Clinic introduced the hot soldering iron as a means of destroying the primary tumor. This procedure seemed to eliminate the high degree of surgical shock formerly associated with extensive surgery of this area and appeared to be a satisfactory means of removing the primary tumor both in the soft tissues and in the adjacent bone. New and his associates followed this procedure with radium insertion into the antrum and packed in place for a definite period of time, usually applying a dose of 2400 mgm hours of gamma radiation.

New and Cabot subsequently reported a 40 per cent five-year survival rate in a group of primary squamous cell carcinomas of the antrum treated by a judicious combination of electrocautery and intracavitary curietherapy. This group was a rather select one, however, and included only the cases which they had deemed "operable" and the ones of these that they had been able to follow.

Ohrgren has devised a transpalatal approach to the antrum consisting of removal of the hard palate; this procedure is followed by destruction of the tumor by diathermy. This is followed by intracavitary application of radium on a prosthetic appliance made for each individual patient. He attempts to deliver 8000 gamma roentgens to the adjacent tissues over a period of weeks using only 50 to 70 gamma roentgens per hour and 10 and 12 hours per day. The window in the palate is then left open for observation of the cavity and for early recognition of recurrence if it appears. The defect is covered by a dental plate so that the speech is not hampered.

The method described has yielded a 42.3 per cent three-year survival rate in the hands of the originator. Sir Stanford Cade reports 50 per cent five-year survival using this method of treatment with the oldest patient now 86 years of age and free from his disease some 22 years after treatment. Watson reporting on 127 cases of primary tumors of the paranasal sinuses treated by insertion of radon seeds and occasional antrotomy for drainage reported a five-year survival rate of 20.5 per cent. It is interesting to note that this worker after having treated the patients with external carotid artery

ligation, radon seed implantation, and occasional symptomatic surgery later came to almost complete reliance on external roentgenotherapy in the treatment of primary antral malignancies. Del Regato reported 10 cases of advanced carcinoma of the antrum treated with external roentgenotherapy only with four of the 10 cases alive and well five years or more after treatment. Del Regato feels that the radio-sensitivity of epitheliomas of the maxillary sinus compares favorably with the sensitivity of lymphoepitheliomas.

Treatment in this series of cases has been somewhat varied. The majority of the cases in the epidermoid groups have had conservative operative procedures consisting usually of antrotomy and electrocautery removal of the tumor or at least the major portion of the tumor without necessarily trying to remove every tumor cell. This procedure has been followed by radium insertion into the center of the antrum packed in place with gauze so that at least one centimeter distance has intervened between the radium source and the antral walls. The dose has varied between 450 and 5000 mgm hours rendering a dose of 2250 to 10,000 gamma roentgens to the tissue nearest the center of the radium source. All radium has been filtered so that only the gamma rays were used. Usually $1\frac{3}{4}$ mm of gold was used.

Some of the cases after receiving intracavitary radium have had additional external radiation applied through two ports of 8 x 8 cm. directed to crossfire the antrum. The amount of external radiation has varied inversely with the amount of intracavitary curietherapy administered. For this purpose deep roentgen therapy employing 200 to 250 KVP and one mm or over of copper plus appropriate aluminum filtration has been used.

In recent years a tumor dose of 4000 to 5000 roentgens in addition to the radium has been aimed for in antral carcinomas. Most of the cases in the five-year group, however, have had only about half this amount of external radiation. A few cases of far advanced carcinoma of the antrum have received external radiation only without the addition of surgery or intracavitary curietherapy. In these cases a tumor dose of about 4500 to 5000 roentgens has been delivered as fractionated and protracted radiation delivered through at least two and sometimes three skin portals. A few of the patients who have survived the neoplasm long enough have developed irradiation necrosis of the bone and have had sequestra removed from time to time. Subsequent plastic operations have been done on three of the patients who received rather large doses of irradiation and had subsequent sequestrectomies.

It is emphasized that most of the patients were

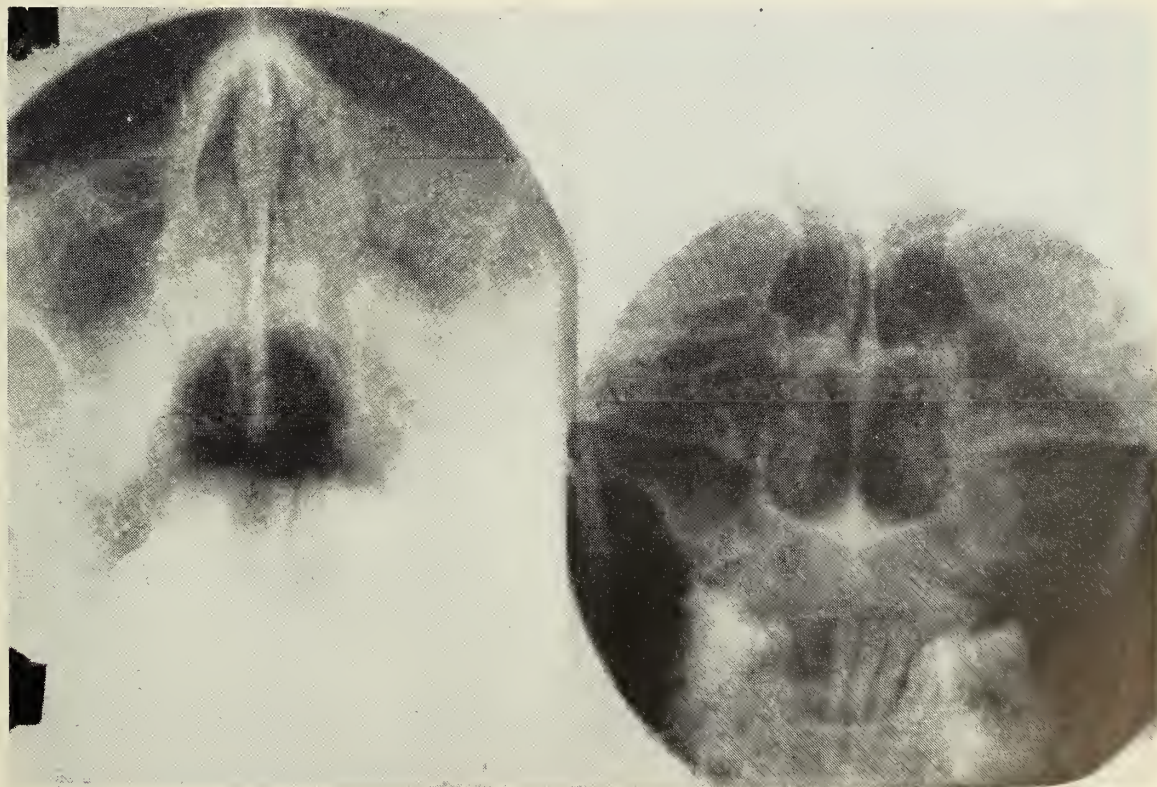


Figure 1. Marked clouding of the left antrum and extensive destruction of the bony walls especially superiorly and laterally. This patient shows no recurrence after eight years.

rather old and generally in poor physical condition. The majority of the tumors were "far advanced" when first seen at this institution. All cases have been included for analysis regardless of the stage of the disease. When death occurred as a result of the tumor it nearly always occurred within the first year or year and a half. Only one case is reported as a three-year survival which was not also a five-year survival if sufficient time had elapsed to be included in this group. This patient died in three years and one month from a recurrence of his tumor. Another patient, however, had a recurrence of the tumor at six years for which operation was done and the tumor remains in abeyance at nine years although it may well not be cured. Generally speaking, if the patient is free from evidence of recurrence at 18 months, he has a good chance for a five or even ten-year survival if he does not succumb to other causes.

Two representative case reports are submitted.

Case 1. This 52-year-old white male was admitted to the University of Kansas Medical Center on December 23, 1940. Examination elsewhere had disclosed an antral neoplasm. Examination revealed moderate swelling of the soft tissues of the left cheek, partial occlusion of the left naris, and minimal proptosis of the left eye. The teeth had been

extracted from the left maxillary alveolus several months previously because of toothache and neuralgia. Symptoms had been present for 10 months. Ten days before admission an antrotomy had been done and tissue obtained for histological study. The pathological report was "squamous cell carcinoma."

X-ray examination, Figure 1, showed almost complete opacity of the left antrum with destruction of the bony walls of the antrum superiorly and laterally. The antrum was opened and 50 mgm of radium filtered with 1.75 mm. gold was packed into the center of the antrum and left in place nine hours. The total dose was 2305 gamma roentgens delivered to the tissue one centimeter from the center of the radium source. Following the intracavitary curietherapy, external roentgenotherapy was administered for a total dose of 1792 r delivered into the center of the antrum. An additional 1200 r (air) was given through an intra-oral cone.

Repeated follow-up examinations have failed to show tumor recurrence. Subsequent dental aid was obtained to supply a satisfactory denture. The patient is now free from disease eight years following treatment.

Case 2. This 63-year-old white male was admitted to the University of Kansas Medical Center on April 5, 1947, complaining of pain in the face and head. He had had a nasal polypectomy three weeks previously with development of pain two weeks before admission. The left eye had become swollen and slightly protruberant and lids somewhat edematous. Nasal obstruction had been present since the polypectomy. Examination showed edema about the left orbit and mild proptosis of the left eye. The nasal septum was deviated to the left and there was a rather profuse, purulent, bloody discharge from the left nostril.

X-rays, Figure 2, showed clouding of all of the paranasal cells on the left and bone destruction involving the walls of the ethmoid cells and maxillary antrum with loss of most of the walls of the antrum and destruction of the floor of the orbit. Antrotomy was done and carcinomatous tissue removed by electrocautery. The pathological report was "squamous cell carcinoma."

Fifty mgm of radium filtered with 1.75 mm gold was inserted into the antrum and packed into place and left for 25 hours. A total dose of 6405 gamma roentgens was thus delivered to the tissue one centimeter from the center of the radium source. Following the intracavitary curietherapy the eye was enucleated and external roentgenotherapy administered through two external skin portals for a total dose of 5000 r delivered to the center of the tumor. Treatment factors were as follows: 250 KVP. 15 MA. 50 cm f.s.d. 0.2 SN plus 1 al filtration.



Figure 2 Marked clouding of all the paranasal cells on the left with advanced bone destruction in the maxillary and ethmoid region. Note the destruction of the floor of the orbit. This patient survived only a very few months.

H.V.L. 1.7 mm cu. 100 sq. cm skin portal; 300 r per day.

One month later the patient was re-admitted to the hospital with intractable pain in his face and head. A trigeminal rhizotomy was done for relief of pain and soon after this procedure the patient had a massive hemorrhage from the nasopharynx and died.

Autopsy showed a necrotic abscess cavity in the left antrum and orbital area with extension through the roof of the left orbit into the cranium. There were metastatic nodes in the left deep cervical chain and in the left pleura with a few isolated metastatic tumor nodules in the left lung.

Summary

We have analyzed 57 cases of malignant tumors

of the paranasal sinuses treated at the University of Kansas Hospitals between 1931 and 1947 inclusive.

Of these 57 cases, 47 were considered primary antral tumors and 10 were considered to have involved the antrum secondarily.

Table I shows the number of each type of tumor and the outcome of the cases. There were 25 cases of primary antral neoplasm which are determinate at five years. Of these, eight cases are alive and well, or 31.2 per cent. Or assuming that the five cases which have gone five years or over and could not be traced are all dead of their disease, we have 30 cases with eight cases alive and well giving a five-year survival rate of 26 $\frac{2}{3}$ per cent. Of the seven cases of primary squamous cell carcinoma

TABLE I
PRIMARY TUMORS

Structural Type	Total No. Cases	Cases Followed	18 Month or Over Survival	3 Year Survival	Living and Well 5 Years or Over
Squamous Cell Carcinoma	21	14	5	3	2
Undifferentiated Carcinoma	10	10	2	2	1
Adenocarcinoma	3	3	1	1	....
Lymphoepithelioma	3	3	2	2	2
Angiosarcoma	4	4	2	2	2
Reticulum Cell Sarcoma	1	1	1 (1 $\frac{1}{2}$ yr.)	....	....
Fibroblastic Sarcoma	1	1	1 (2 $\frac{1}{2}$ yr.)	....	....
Angioendothelioma	1	1	0	0	0
Small Round Cell Sarcoma	1	0	....	....	....
Osteogenic Sarcoma	1	1	1	1	1
Rhabdomyosarcoma	1	1	0	0	0
Totals	47	39	15	11	8

TABLE II
SECONDARY TUMORS

Structural Type	Total No. Cases	Cases Followed 5 Years	18 Month or Over Survival	3 Year Survival	Living and Well 5 Years or Over
Squamous Cell Carcinoma from the Buccal Mucosa	1	1	0 (Dead 14 mo.)	0	0
Squamous Cell Carcinoma from the Face	2	2	2	2 (1 Dead 4 yr.)	1 (15 yr.)
Basal Cell Carcinoma from the Face	2	1	1 (Dead 2 yr.)	0	0
Undifferentiated Carcinoma from the Nose	1	1	0 (Dead 5 mo.)	0	0
Chondrosarcoma (Site of Origin Not Determined)	1	1	1 (Dead 2 yr.)	0	0
Cylindroma from Post-Nasal Mucosa	1	1	1	1 (Dead 37 mo.)	0
Xanthofibroangioma from the Nose	1	1	0 (Dead 2 mo.)	0	0
Extensive Tumor of Nasopharynx and Floor Skull. Type Unknown	1	1	0 (Dead 2 mo.)	0	0
Totals	10	10	5	3	1

which are determinate at five years, two are alive and well, or 28.5 per cent. Or assuming that the five indeterminate cases are all dead we have 12 cases with two having survived five years or over giving a five-year survival rate of $16\frac{2}{3}$ per cent.

The secondary tumors of the antrum do not lend themselves well to grouping. However, Table II will show in tabulated form the outcome of these cases.

Of this group, one five-year survival is recorded. This was a primary squamous cell carcinoma of the face which had secondarily invaded the antrum and has survived 15 years at the present time.

Conclusions

A five-year survival rate of 26 per cent is somewhat lower than the majority of statistical reports on tumor of this type and location.

This is explained by the fact that the majority of our cases were far advanced when first seen and would not have been included in most series because of the obvious "inoperability." In many of these cases surgical as well as irradiation procedures were of a palliative nature only.

Conservative surgery consisting of removal of

the tumor by electrocautery followed by a judicious combination of intracavitary curiethrapy and external roentgenotherapy is now the recommended treatment for these tumors.

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CANCER CONFERENCE

Make plans now to attend the Second Annual Mid-West Cancer Conference to be held at the Broadview Hotel, Wichita, Kansas, January 19, 20 and 21, 1950.

Cytologic Study of Sputum, Bronchial Secretion, and Pleural Fluid In Carcinoma of the Lung

Don E. Miller, M.D.*†

Wichita, Kansas

The death rate from carcinoma of the lung is second only to that of the stomach and recent statistics show that it is increasing yearly. The only hope for betterment of the low curability rate is the earlier diagnosis while the lesion is sufficiently localized. In a recent report of 412 cases of primary carcinoma of the lung Ochsner¹ states that of every three cases of clinical pulmonary cancer, two will appear to be operable and only one will be resectable, with an over-all five-year survival rate of only eight per cent. The poor curability rate of carcinoma of the lung appears to be due to the paucity of symptoms of early disease, which precludes the patient's coming to the doctor until the lesion is well advanced, and the delay by the physician in establishing a diagnosis. In an effort to overcome these difficulties and establish earlier diagnosis while the lesions are still resectable, new emphasis has been given to the cytologic method of cancer diagnosis.

Development of Cytologic Techniques

The first report of finding malignant cells in sputum was made in 1860 by Beale² from a case of carcinoma of the pharynx. Hampeln³ in 1889 by the use of unstained fresh smears was the first to report the finding of malignant cells in a case of carcinoma of the lung. Bezancon and de Jong⁴ in 1913, Dungeon and Wrigley⁵ in 1935, Barrett⁶ in 1939, and others^{7, 8} reported malignant cells in stained smears from cases of proved bronchogenic carcinoma. In 1929 Papanicolaou⁹ reported a simple method of fixing vaginal smears by which good cytologic detail could be retained. Little interest was shown in his method until Papanicolaou and Traut¹⁰ published their monograph in 1934, which since has become so popularized that it is known to the laity as the "cancer test." In 1946 Papanicolaou¹¹ applied his method to sputum and bronchial secretions. A complete review of the subject was published by Wandall¹² of Copenhagen in 1944.

Examination of pleural and other serous fluids for tumor cells is also not a new method of diagnosis. As early as 1875 Quincke¹³ saw and reported tumor cells in smears from pleural and abdominal fluids. In 1895 Bahrenberg¹⁴ published a technique for embedding and sectioning small bits of tissue found floating in aspirated fluids. Mandelbaum¹⁵ in 1917 was probably the first to describe the technique of

embedding centrifuged sediment in paraffin as it is done today. Zemonsky (1928),¹⁶ Foot (1937)¹⁷ and (1938),¹⁸ and Schlesinger (1939)¹⁹ have long used and recommended the examination of serous fluids for tumor cells.

Morphology

As epithelial cells are constantly desquamated from the walls of the respiratory tract it is necessary to become familiar with the cytologic detail of cells in normal sputum and bronchial secretions before malignant cells can be recognized. As the variety of both normal and malignant cells has been thoroughly described in the literature^{20, 21, 22, 23} a detailed description will not be attempted. Non-malignant cells may be classified into three groups: first, the epithelial cells which include squamous cells lining the mouth and pharynx and the ciliated columnar cells lining the trachea and bronchi; second, the inflammatory cells which include leukocytes, eosinophiles, lymphocytes and erythrocytes; and third, the macrophages or phagocytic cells of the lung.

The malignant cells vary to a certain extent according to the type of tumor from which they arise. Boyd²⁴ classifies bronchogenic carcinoma into three types: first, squamous cell; second, small cell or undifferentiated cell; third, adenocarcinoma or cylindrical cell type. In general malignant cells as seen in smears are larger than normal cells, but cytoplasmic characteristics are variable and of little diagnostic importance. The nuclei are large in proportion to the amount of cytoplasm. They are hyperchromatic, have an irregular contour and vary greatly in size and shape from cell to cell, with large and prominent nucleoli.

In the squamous cell type cornification and even pearl formation may be seen. With the undifferentiated type clumps of small round cells which appear crowded together are frequently seen. Glandular arrangement is unusual in the adenocarcinoma type and the large vacuolated cells seen must be distinguished from fat filled macrophages.

In smears from pleural fluid the criteria for diagnosis of malignant cells are much the same as for sputum and bronchial secretions, but because exfoliated mesothelial cells in nonmalignant serous effusion live and multiply in the excellent culture medium they may present large nuclei with hyperchromasia, frequent multinucleation, and mitoses.

*From the Department of Pathology, St. Francis Hospital, and Sedgwick County Tumor Clinic, Wichita, Kansas.

†Now with The Ball Memorial Clinic, Manhattan, Kansas.

Therefore the presence of an arrangement of cells suggesting acini or papillae is essential for the diagnosis of carcinoma from serous effusions.

Methods and Materials

Since January, 1947, smears have been prepared according to the Papanicolaou technique from sputum, bronchial secretions, or sediment from centrifuged pleural fluid in 56 cases of suspected carcinoma of the lung. At least four slides were made from each specimen and immediately fixed in a solution of equal parts of 95 per cent alcohol and ether. The smears were stained with hematoxylin and eosin with the daily routine paraffin sections. Papanicolaou's differential stain OG6 and EA36 was not used because both methods use the same nuclear stain (i.e. Harris's hematoxylin). Since cytological diagnosis depends entirely upon nuclear characteristics and not upon the polychrome stain of the cytoplasm, no advantage could be seen in the more complicated polychromatic stain.

After careful microscopic examination smears were reported as positive or negative for tumor cells and diagnosis was made upon groups of atypical cells with an arrangement suggesting that of tissue and not merely upon atypia of an individual cell.

Results

Although 56 patients were studied with over 220 smears, diagnosis could be confirmed in only 43. Of these carcinoma was proved in 22 by biopsy,

surgical specimen or necropsy. In the remaining 21 cases other diagnoses were established or follow up studies failed to reveal carcinoma.

Of the 22 cases proved to have cancer, positive smears were found in 14, giving a correct positive diagnosis of 63.6 per cent; of the 21 nonmalignant cases one smear was diagnosed as positive, giving a false positive diagnosis in 4.8 per cent.

Bronchial secretions were examined in 22 patients of which 12 proved to have cancer. Positive smears were diagnosed in seven cases with a correct positive diagnosis in 58.3 per cent. In 10 cases with no cancer one smear was called positive resulting in a false positive diagnosis of 10 per cent. Pleural fluids were examined from 17 patients. There were 10 cases of proved cancer of which seven cases were positive, giving a correct positive diagnosis of 70 per cent. In the nonmalignant cases no false positives were reported. Sputum was examined from six patients with no positive smears in two proved cases of cancer, and there were no false positives in the four nonmalignant cases.

It is interesting to note that the one false positive was from a lung abscess following a pneumonitis in which the history was suggestive of carcinoma. It has been pointed out that in inflammatory lesions, tuberculosis, and pulmonary infarction abnormal macrophages and metaplastic changes in bronchial

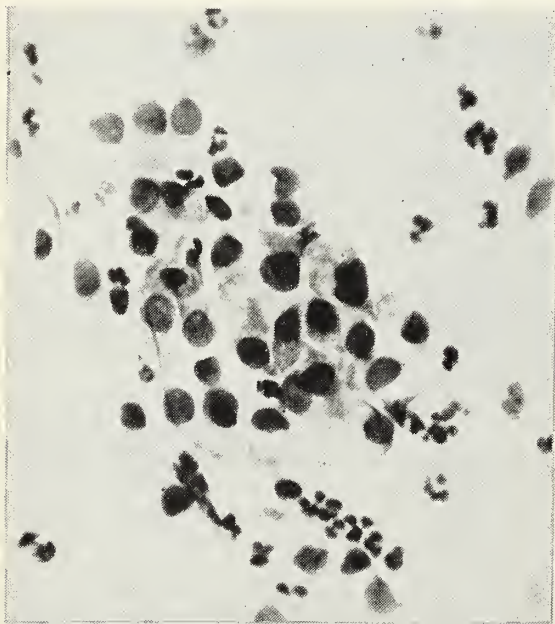


Fig. 1. Ciliated Columnar Cells from the Tracheal and Bronchial Mucosa. (X400)

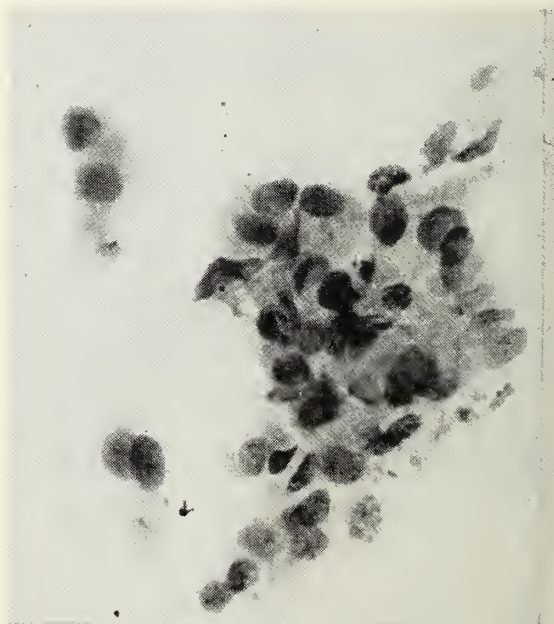


Fig. 2. Group of Atypical Cells Showing Variation in Size and Shape of Nuclei. (X400)

epithelium may give rise to atypical cells or groups of cells.^{21, 22, 23}

Discussion

In a review of the literature accuracy of cytological diagnosis was found to vary from 42 per cent to 84 per cent in sputum examination, from 30 per cent to 79 per cent with bronchial secretions, and from 50 per cent to 85 per cent for pleural fluid (Table 1). It can readily be seen that with the exception of sputum our results are comparable with those obtained from other hospitals throughout the country. The poor results obtained in sputum examination might possibly be explained on the basis of failure to concentrate the specimens and the small number of cases examined. Herbut and Clerf,²⁰ who reported 79 per cent positive diagnosis in bronchial secretions, were able to find malignant cells in only 14 per cent of sputum examined. Dilution of sputum which makes the finding of tumor cells more difficult, and the fact that expectoration of sputum does not usually occur until late in the disease, were offered as explanation for their low percentage. According to Liebou²⁵ bronchial secretions are twice as sensitive as sputum in arriving at correct diagnosis.

In considering the accuracy of the procedure the method of obtaining bronchial secretions is important, for from 25 per cent to 40 per cent of tumors are either located peripherally or in the upper

TABLE 1.
ACCURACY OF CYTOLOGICAL DIAGNOSIS
OF CANCER

	% Correct Positive Diagnosis	% False Positive Diagnosis
Smears of Sputum		
Wandall	84%	9.1%
Papanicolaou	82%	-----
Liebou et al	42%	5.1%
Farber et al	82%	-----
Smears of Bronchial Secretions		
Herbut and Clerf	79%	3%
Liebou et al	30%	4.8%
McKay et al	74%	1.8%
Smears of Pleural Fluid		
Zemansky	50%	-----
Foot	85%	-----
Schlessinger	58.3%	1%
Phillips and McDonald	56%	2%

lobe which cannot be reached with the bronchoscope. In an effort to reach these lesions Clerf has devised an aspirator with a glass collecting cup and a flexible curved tip. In cases with little or no secretion one cc to two cc of saline may be injected and then aspirated. Gladstone²⁸ has recently suggested the method of sponging the suspected area with a piece of gelfoam which is fixed in formalin and embedded and cut like tissue.

It is well known that tumors can cause serous effusions by blockage of lymph channels and by



Fig. 3. Group of Atypical Cells Showing Large Nuclei in Proportion to Cytoplasm. (X400)

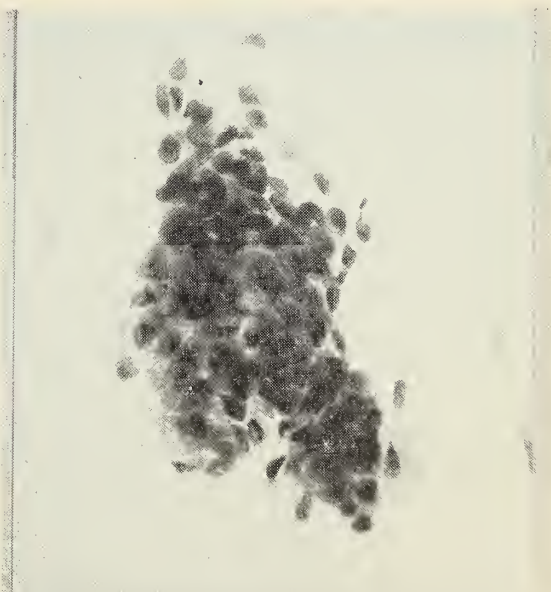


Fig. 4. Group of Cells Incorrectly Considered to Be Atypical from a Case of Lung Abscess. (X400)

compression of blood vessels, but tumor cells will not be found in effusions until there are tumor implants on the serosal surfaces, which usually represents far advanced disease. The finding of tumor cells in pleural fluid is therefore of great prognostic importance. In all of our cases in which tumor cells were identified in pleural fluid the patients have since died of their disease.

There have been many attempts to diagnose cancer from a single cell (Lebert, Hannover, MacCarty),²⁶ but all the criteria advanced such as large and deeply staining nuclei, large nucleoli in relation to the nucleus, multinucleated cells, and mitotic figures have repeatedly been shown to occur in cells from nonmalignant lesions such as pleural effusion and inflammatory lung disease. Therefore, because individual neoplastic cells have no specific morphological characteristics, malignancy should not be diagnosed unless groups of cells with an arrangement suggesting that of tissue are seen. Papanicolaou¹¹ states, "The diagnosis of cancer by smears should be based on strong and substantiative evidence offered by sufficiently pathognomonic cells and cell groups, and one should refrain from reaching a final conclusion on the strength of only a few cells."

Conclusion

The present trend of popularization of cytologic diagnosis is not without danger. A method which varies in accuracy from 50 per cent to 80 per cent should not altogether replace clinical study, roentgenological and bronchoscopic examinations, and biopsy. The cytologic study of secretions should be added to our diagnostic armamentarium, but used as an adjunct to stimulate more intensive study of the patient rather than as conclusive evidence of carcinoma.

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91st ANNUAL SESSION KANSAS MEDICAL SOCIETY

Wichita, Kansas

May 15-18, 1950

Tuberculosis in the Aged

Jay L. Sitterley, M.D.*

Topeka, Kansas

An increasing number of persons over 45 years of age are dying of tuberculosis each year. The Public Health Reports of April 1, 1949, state that 24 per cent of those who died in 1900 were in the age range of 45 years and over. In 1940 the percentage was 42 per cent and in 1947 it was 52 per cent. During the same year of 1947, the Kansas State Board of Health reported 186 deaths in the age range of 45 years and over. This is 59 per cent of the total mortality. Of those 65 years and over, the number was 77, or 24 per cent.

At the same time, the national office of Vital Statistics reports an increase in mortality in the age range of 65 years and over. J. Arthur Myers writes that, "Among persons who had died after the age of 50 years, Medlar observed that more pathologically significant tuberculosis was present in those examined from 1940 to 1945 than in those from 1916 to 1920." Of course, several factors account for this. There are now more aged persons, both from a numerical and percentage point of view; also, diagnosis and therapy is better in the lower age groups. Patients in the older age ranges many times do not seek medical advice and care, for symptoms they have had many years. Their physiological responses to a progressive tuberculous disease are also less apparent or disabling than in the younger patient. It is not at all uncommon to find men or women in their seventies or eighties with a far advanced contagious disease, who disclaim any and all disabilities. In fact, some do a surprising amount of work. They apparently are in equilibrium with their tuberculosis, despite its progressive contagious character.

Clinical tuberculosis starts with a first, or primary disease. It matters little whether the reinfection disease is endogenous or exogenous. I suspect that many

of the clinical diseases in the aged are an endogenous exacerbation of a previously quiescent or arrested tuberculosis.

It might be said, "Why do anything with these patients if they aren't ill? Why not let them 'die happy' in their home surroundings?" This is a debatable question, but it is not tuberculosis control. That they may die happy is no excuse to infect others, to perpetuate a disease entity into future generations. I often think of the duties of grandmas and grandpas: "In addition to your duties of being loving grandparents, you will also perpetuate tuberculosis onto your heirs." Facetious as this remark is, it is too many times true. To control tuberculosis is to control the infection rate; and to control the infection rate, look to a source that is near and very real.

Once found, all contagious cases should be hospitalized to protect the family and the public. Where, must next be answered. Sanatoria would much rather have younger patients in whom the chance of therapeutic success is greater. They usually have no beds for the chronic, slowly progressive case. They are then sent home where isolation is hoped for, and where supervision and care are either minimal or absent. Facilities for the care of chronic, contagious diseases are practically non-existent. As the life span lengthens and the total number of these increase, the need of public protection will increase.

In conclusion: tuberculosis appears to be an increasing cause of death in the aged. They do constitute a public health hazard, and since the control and eventual eradication of tuberculosis requires the isolation of all contagious cases, it is hoped that facilities to accomplish this can be investigated.

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* Kansas Tuberculosis and Health Association.

SECOND ANNUAL MID-WEST CANCER CONFERENCE

Wichita, Kansas

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CHILD WELFARE PAGE

Otitis Media In Childhood

Middle ear infections at any age of childhood are of two general types, "catarrhal" and suppurative, both of which have acute and chronic forms. The key to all of them is usually the presence of hypertrophic adenoids.

Acute "catarrhal" otitis media depends upon obstruction of the inner, nasopharyngeal, opening of the eustachian tube by swelling of adenoid tissue. A portion of the enclosed air is taken up from the closed compartment thus formed, resulting in a negative pressure there. This partial vacuum retracts the eardrum, which becomes reddened, painful, and at times sufficiently edematous to mask the indrawing. The physiologic treatment consists of shrinking the adenoid tissue with vasoconstrictors, thus reestablishing the patency of the eustachian tube and equalizing pressure on both sides of the drum. Medication applied to the external surface of the drum is palliative only, and by promoting maceration may prevent further accurate diagnosis. Myringotomy is rarely indicated.

Chronic "catarrhal" otitis media is caused by long continued partial obstruction of the eustachian tube, with relatively frequent acute or sub-acute exacerbations. The drum becomes extremely retracted, and is thickened by chronic low-grade inflammation and bound down by adhesions. Deafness to high frequency tones usually follows, which sometimes extends into the range of human speech. The ideal treatment today consists of a careful removal of the adenoids, followed by radium or radon irradiation of the stumps to prevent regrowth.

Acute suppurative otitis media may follow the "catarrhal" form; the partial vacuum draws a serous transudate that is an excellent medium for bacterial growth. In other cases it is primary, as when infectious material is forced into the eustachian tube from the pharynx, or in the course of a blood stream infection. In all these cases, a purulent exudate is formed which builds up a positive pressure within the ear, bulging the drum outward and causing inflammation and usually pain and fever. The mastoid bone may become involved. Antibiotics and sulfonamides, singly or in combination, given parenterally, are the drugs of choice; they can frequently abort the entire disease process. Myringotomy permits the selection of a peripheral and easily healed portion of the drum for drainage. Drugs applied locally are scarcely effective, as they must penetrate deeply against the direction of drainage and operate in the presence of a considerable purulent material.

Chronic suppurative otitis media is now comparatively rare. Such a state exists, however, when the ear continues to discharge purulent material in the absence of pain or fever. If this process is permitted to continue, widespread involvement of the mastoid may occur, and deafness due to perforation of the drum and fixation of the auditory ossicles. The preferred treatment would consist of (1) x-ray plates to determine the status of the mastoid, (2) specific parenteral therapy to control or eradicate infection, and (3) mastoidectomy if necessary. Identification of the responsible organism is desirable.

All children should be given hearing tests after severe ear infections. This is particularly important for infants after a chronic suppurative process, as unrecognized deafness may drastically interfere with speech and personality development. Children with high grades of deafness need special home care and special teaching methods, and should be referred to the appropriate person or agencies.

CANCER PAGE

Blood Tests for Cancer

We need to develop a simple laboratory test for cancer which could be used to: (1) assist in the differential diagnosis on patients suspected of having cancer; (2) screen the general population to detect early cancer. Existing aids such as cancer detection centers and diagnosis of exfoliative cytologic smears can only be a partial answer to our need for improved cancer diagnostic and detection methods. These conclusions were expressed by interested physicians at recent meetings sponsored by the American Cancer Society at Portsmouth, New Hampshire, and the National Cancer Institute at Washington, D. C.

Chemical, physical or immunological changes in body fluids produced by one or more types of cancer would provide the basis for such a test. Hundreds of published scientific articles already suggest basic or applied evidence for such tests. The evidence in most of these reports, however, has not been confirmed or accepted by other investigators. Many authors have not differentiated between different types of neoplasms or early and terminal cancer cases.

The National Cancer Institute, and more recently other organizations, are encouraging a program for critical and proper evaluation of proposed cancer tests as well as modification and development of new tests. An increasing number of research laboratories, including those at the University of Kansas Medical Center, are participating in this expanding research program.

At the present there is no recognized acceptable blood test for cancer. No test has been developed to the point where its trial in routine laboratories or physicians' offices is worthwhile. At the present time with many of these tests it is first necessary to make trial tests on several hundred patients in a laboratory before standards for cancer and non-cancer patients can be established for that particular laboratory. However, a number of the papers in the literature offer encouraging evidence that one or more suitable tests may eventually be developed.

If cancer comprises a multiplicity of diseases with similar biological manifestations, as some think, a test may only be able to indicate one or a few types of neoplasms. Such tests will not be perfect in their results but it will be worthwhile if we even obtain another supplemental aid in cancer diagnosis.

PRESIDENT'S PAGE

Dear Doctor:

In our efforts to supply physicians for rural Kansas and to preserve our liberties, we might forget other equally important problems. There follow a few random thoughts on our state institutions.

The 1949 legislature opened the way for many needed improvements. Dr. O. W. Davidson, chairman of the governor's Advisory Commission, has been performing a magnificent service and already many improvements can be noted. Additional medical personnel is being supplied. The Topeka State Hospital has recently been approved for residency training in psychiatry. A program of employee training is under way.

Many other improvements are needed. Figures supplied by the State Department of Social Welfare, as of September 30, record that the three state mental hospitals had a population of 5,047 persons. The average per patient day cost was \$1.55. This makes a daily expense of \$7,822.85 just for patient care. The average age of all patients in the three hospitals is just over 55 years, and the average length of stay is 12 years. According to these figures, the average patient has cost the state for care alone \$565.75 a year, or for the average stay \$6,789.

The other two hospitals, at Parsons and at Winfield, present a slightly different picture. The average age at Winfield is lower, the daily cost less, but the length of stay greater. At Parsons the figures are more nearly comparable to those given above.

Looking at this in another way, we once heard that when the total expenditures for buildings, upkeep, personnel, subsistence, everything, had been taken together and divided by the total number of patients, the cost per patient was \$30,000.

A brief glance at the financial savings that could be effected, to say nothing of the human factor, if the average length of stay could be reduced, would convince every physician that any effort spent in the improvement of this situation would be well worth its cost.

Sincerely,

Haddon Peck, M.D.

EDITORIAL COMMENT

The F.B.I. Investigation

Speculating on government policy, like contemplating why a chicken crosses the road, is a useless recreation. In the end you have neither learned nor accomplished anything.

Ask yourself why the United States Department of Justice felt compelled to investigate "alleged violations of the federal anti-trust laws in the medical field" at this time. When the medical profession has meticulously restricted participation in Blue Shield programs to insure the public uniformly high quality medical care, why should our federal government move to reduce these standards? You answer that one.

I build an inferior mousetrap but you who manufacture a better product are forced to advertise and sell mine with yours and at the same price. You figure it out. Or would it be easier if mice were declared a national emergency and the government proposed taking over the mousetrap business?

Health is a national emergency, you remember. It is no secret that the government wants to enter the field of medical care. A primary argument is that the nation suffers too many unnecessary deaths, but now for attempting to correct this the medical profession is charged with violating federal laws. There is no mystery about what is happening. The American Medical Association and some 20 state and county medical societies are being investigated. Files and correspondence of these organizations are being scrutinized in the frank effort to find evidence of discrimination. The Department of Justice says we cannot claim Blue Shield to be better than the small clinic that provides health insurance for profit. Such practice is discriminatory, restricts fair trade and violates the Sherman Anti-Trust Law.

If a physician has a license to practice the government proposes to give him a free ride on Blue Shield, on the hospital staff of his choice and for every other medical benefit. Should such an individual regularly perform inferior services or resort to unethical practice he may not be restricted because that would violate the freedom guaranteed him in this democracy. If you wonder what protection the public might have in all this hysteria, perhaps you should ask the Department of Justice. It is their crusade, not ours.

It seems to have become illegal to act in the patient's interest. Mr. McGrath, administering the new justice, defends the individual non-conformist but leaves the public unprotected.

If that is the new justice, then why regulate

banks? Each individual should set his own interest rate and invest the money entrusted to his care in any manner he selects. Anything short of this will restrict the liberty of the individual money lender and as surely violate the Sherman Anti-Trust Laws as regulations imposed upon the individual doctor. The illustration is not altogether fortunate because in one instance a man's money is involved while in the other it is only a man's life.

A better example may be found by recalling the days of rival telephone companies, when a single community was often served by two or more and their lines could not be connected. Telephone service today is most certainly a monopoly, and in that development the smaller companies were discriminated against. To be logical we should revert to the former system. If the Department of Justice wishes to guarantee healthy competition, to strike down the evils of monopoly, then this theory should be played across the board regardless of cost or inconvenience and affect all business and professions alike.

If there can be no selection among physicians participating with Blue Shield, how can hospital staff appointments legally be controlled? This could be carried forward to include membership in a medical society, specialty boards, fraternal organizations, and everything else. The medical profession does not resent the investigation but resents the reasons for the investigation. The Department of Justice has been given every cooperation. Should an investigation be made of Kansas, the Society's files will be turned over and every consideration will be given the agent assigned to this task.

The medical profession does not pretend to be blameless. The holder of a medical degree is still human and susceptible to the frailties besetting people in other walks of life. There is much about medical care that needs improvement, but where has another profession made such strenuous attempts at self discipline? Where else has this been so clearly designed for the public good? The profession is now confused because the attack is made on exactly the one point where medicine felt it had contributed most. If what medicine has done retards progress then, it is being asked, what direction will progress take in the future?

It could be a coincidence that this investigation began shortly after Mr. McGrath became attorney general and that he was a co-sponsor of the administration's socialized medicine bill. There might be no relation between this investigation and the efforts of some government officials to socialize this portion of American life. That question also remains

one of the inscrutables in the picture. The ways of the government are often strange, but on the question of socialized medicine the picture is especially confusing.

It is known that Mr. McGrath favors socialized medicine. Should that come to pass, there would be no reason for the continued existence of Blue Shield or those other non-medical insurance companies he is now moving to protect. If the government takes over medical care, those companies and the private health and accident companies will presumably go out of existence along with Blue Shield. There will then remain only one health insurance agency in the nation. A monopoly, you ask? How would that foster healthy competition? Under socialized medicine what about discrimination and violation of the Sherman Anti-Trust Laws? There are easier problems than this we have trouble understanding.

Survey of Reader Interest

Within a few days all members of the Kansas Medical Society will receive a questionnaire prepared by the Editorial Board. It will be much appreciated if each physician would take a few moments to return his reply in the franked envelope provided. Additional comment and suggestions may be included on the back of the questionnaire. The Editorial Board is hopeful that a large number of suggestions will be received and will welcome whatever ideas are presented regarding ways in which your Journal may be improved.

The Editorial Board has always endeavored to make the Journal readable and instructive. The paper shortage during the war limited its size, but today that is no longer a factor. Present regulating problems are primarily economic, and the Journal is largely supported by firms that advertise in its pages. They are alert to the returns they receive on such investments and will advertise wherever it is profitable to do so. Suggestions on ways in which we may benefit advertisers will be much appreciated.

It is hoped that all sections of the Journal will be criticized, giving the Editorial Board suggestions regarding the scientific papers that are being published, subject matter, length, and illustrations. We hope to learn what you enjoy in the Journal, what you read and what you do not care for.

In spite of its length the questionnaire will be easily answered. Most sections may be answered merely by marking the space provided. Your co-operation in this analysis will be helpful to the Editorial Board and will serve to bring you the kind of Journal you want.

A.M.A. Assessment

Those who were present at the public relations meeting in Wichita on October 2 and heard Mr. Whitaker and Miss Baxter, directors of the A.M.A. educational campaign, speak will have no doubts concerning the effectiveness of this program. For perhaps the first time in its history is the American Medical Association telling the people of this country medicine's side of the story. The reaction has been good and, as Whitaker and Baxter contend, this will become even more noticeable.

The national educational program is financed through an assessment of \$25 made upon each member of the A.M.A. This applies in Kansas to every physician who pays dues to the Kansas Medical Society. Many have neglected to pay this assessment, and it would be appreciated if that could be done immediately.

Checks for \$25 should be made payable to the American Medical Association but mailed to the Kansas Medical Society, 512 New England Building, Topeka, Kansas. The Kansas office will record this payment and forward the check to the A.M.A.

The Council of the Kansas Medical Society urges every physician to participate in this worth while project and has directed the executive office to inform each physician of his status in this regard. All are asked to cooperate in this program so that Kansas, where such notable achievement has been accomplished in the preservation of free enterprise, may also take pride in its participation in this national campaign.

Radiation Exposures in Shoe Stores

Many shoe stores are now supplementing the usual shoe fitting methods with fluoroscopes known as x-ray shoe fitters. Several articles in a recent issue of New England Journal of Medicine report potential dangers that exist through the indiscriminate use of such equipment.

The unit consists essentially of a 50-kv. x-ray tube operating at three to eight milliamperes through a one mm. aluminum filter, housed in a case lined with lead or steel and containing a fluorescent screen. A push button automatic timer is set for exposures ranging from five to 45 seconds, although 20 is the most popular. Within that range doses between 10 to 116 r could be delivered to the feet of a customer. Repeated fittings increase the exposure in proportion to time. There are also dangers in scattered radiation through the foot opening in the machine and the filter. This was found to be more than 100 milliroentgens per hour at 10 feet from the unit or 15 milliroentgens per hour at 25 feet.

It covers an area of about 90 degrees from the foot opening out into the room. The maximum safe daily dosage might therefore be received by a clerk working in that area within the first hour of operation.

It is also considered potentially dangerous to the customer, especially to children. Growing bones are easily damaged by exposure to x-rays and may become affected after exposure to less than half of the dosage that will cause erythema of the overlying skin. This is hardly possible after a single exposure to the shoe fitting fluoroscope, but if numerous exposures are made within one day epiphyseal damage could result in children and skin damage either to children or adults. Repeated fluoroscopy of the foot by improperly regulated machines from early childhood to the age of normal closure of the epiphyses could result in foot deformities and even in permanent skin damage.

The health departments in several states have already acted to regulate the use of these machines. Signs indicating their potential danger must be posted nearby. The Massachusetts Department of Hygiene, for instance, recommends the maximum of one r per viewing, three exposures per day and 12 exposures per year. This is stricter than the requirements in New York or of the American Standards Association, but it seems advisable that some such regulations be set up at all places where these machines are in operation. This would serve to protect not only the customer but also the clerk who is exposed to the rays all day long.

Accidental Deaths in Kansas

The accidental death report of the Kansas State Board of Health has just been released. This edition of what has long been considered the best report in the nation is the most attractive volume yet produced. It is worth every physician's time to contemplate the statistics therein published.

The 1948 experience covered in this report records the highest accidental death rate in 10 years. It reports the fourth leading cause of death, responsible for one death out of every 14. For the younger age group, persons under 45, accidents are the leading cause of death. The United States as a whole effected a two per cent reduction of its accidental death rate during 1948. The death rate in Kansas increased 14 per cent.

First cause of death in the state, as in the nation, comes from diseases of the heart, with a total of 32 per cent. Second is cancer with 14 per cent, third is intracranial lesions of vascular origin with 11 per cent, and fourth is accidents with eight per cent. The sharp rise in the accidental death total is largely attributable to motor vehicle mortality since acci-

dents at home, in public places and of occupational origin remained relatively constant. It is also interesting to note that 65 per cent of the 1,461 accidental deaths were males, that only in home accidents is mortality among females greater. Three-fourths of all motor vehicle deaths were males. In public places they represented 84 per cent and in occupational accidents the mortality is 98 per cent male.

The report states that during 34 years accidental deaths from all sources, excluding motor vehicles, has undergone little change. In 1914 the rate was 55.6 and today is 50.5. The motor vehicle death rate in 1914 was 2.2 per 100,000 population. Last year it was 27.4, representing an increase of 1,145.5 per cent in 34 years.

Not all of this can be attributed to the increase in motor traffic since motor vehicle mortality in urban areas has steadily decreased. Eighty per cent of these deaths occurred in rural areas. The majority occurred under the most ideal driving conditions, daylight with clear skies and dry roads. 1948 offered only 89 days of rain, snow, ice or mud. This is 24 per cent of the year, but during those days only 15 per cent of the accidents occurred. The greatest number of fatal motor vehicle accidents occurred on Sunday. With Friday and Saturday added the three week-end days accounted for more than one-half the total. August represents the month having the largest number of accidents, and of course special week-end holidays always exact a heavy toll of lives.

From the report then it appears that something could be done to make driving relatively safer. Congestion is heavier in the city streets than at any time in rural areas, and yet those cities that have conducted a continuing safety campaign have recorded continued improvement. The unpleasant picture presents a problem relating to the construction of better roads, more careful examination of driving fitness, more adequate regulation of automotive care, and most of all the reduction of speed.

Heart Association Elects

Dr. John Porter, Concordia, was named president of the Kansas Heart Association for 1950 at a meeting held at Emporia October 27. Other officers chosen were: Dr. Ralph I. Canuteson, Lawrence, president-elect; Dr. Don C. Wakeman, Topeka, vice president; Mr. Willard Breidenthal, Kansas City, treasurer; Mr. Frank Sullivan, Topeka, secretary.

The Kansas organization, still in its first year, is affiliated with the American Heart Association. Offices will be maintained in the Masonic Temple Building, Topeka, and Mr. Ralph D. Nixon has been employed as executive director.

SOCIALIZED MEDICINE

Editor's Note. This is the fifth of a series of articles dealing with federal compulsory health insurance. These are designed to give the physician factual information and reliable data which may be used in the preparation of articles or speeches on this important subject. Additional material will be presented in subsequent issues.

Comparative Costs

The ultimate cost of a socialized medicine system should be of primary concern to the American people. No one can speak with assurance on this subject because only experience will indicate what this cost will be.

On the basis of our current national income the President estimates the increased social security tax to raise a fund of four and one-half billion dollars and that Congress will appropriate an additional one and one-half billion dollars to finance a project he says will cost six billion dollars a year. Most economists are of the opinion that the cost will be considerably higher.

Germany has had socialized medicine for some two generations, and if the American tax structure would be based on Germany's system the cost would be 30 billion dollars a year. In other words, transplanting Germany's socialized medicine program into the United States would cost five times President Truman's estimate.

Or, transpose the British sickness tax into America and a fund of 18¾ billion dollars would be raised each year. This is more than three times the President's estimate.

In New Zealand free medicine costs three shillings out of each pound of the national income. Three-twentieths of the 224 billion dollars national income in the United States is 33½ billion dollars a year.

The United States government has operated a medical care program for veterans. This is a fair indication of what the government can do, and if this were representative of a national program, it would cost the American people 19 billion dollars a year.

If you average these figures, the cost is 23 billion dollars a year for free medicine in the United States.

Political medicine has increased in cost wherever it has been tried. When Germany first began its program the annual tax per member was \$13.77. By 1929 the per capita cost had risen to \$99.24. This represents an increase of 700 per cent. Multiply President Truman's six billion dollars by 700 per cent and you have a figure that can give you something to think about.

The English plan is relatively new but it costs

four dollars per month for everyone more than 10 years of age. This is \$48 per person per year, almost \$200 for a family of four. A physician is paid four dollars per person per year. The other \$44 goes to support the program and to pay the administration costs. In England then less than 10 per cent of the total tax is returned to the physician for services.

The Hoover commission reported on the waste and duplication in government hospital construction and operation. Private hospitals are built for \$16,000 per bed or less, but for the Veterans Administration the cost is \$20,000 per bed in the larger hospitals and \$30,000 per bed in the smaller hospitals. One Veterans Administration hospital in Montana cost \$50,000 per bed. The report also states that government agencies are constructing hospitals without regard to the location of other government hospitals. In New York, for instance, four out of 11 government hospitals could be closed and all patients cared for. Not only would this save upkeep and operation expenses but 80 per cent of the medical officers could be released to relieve the civilian physician shortage. The government simply cannot operate on an economical basis.

The above are random but valid figures illustrating the high cost of government medicine. In an earlier article in this series it was pointed out that the administration bill carries a provision to draw from the general treasury of the United States whatever is needed to cover the deficit. It is a certainty that six billion dollars will not cover the program. How much greater the cost will be cannot be estimated at present, but surely the experience of other nations provides an indication. And those figures transposed into the American situation will at least give the taxpayer something to consider.

Medical Center Bulletin

The first issue of the University of Kansas School of Medicine Bulletin, to be published bi-monthly, appeared last month. Copies were sent to all physicians in the state of Kansas and all of the school's alumni now residing in other states.

The publication's primary purpose, as stated in the Bulletin, is to bring Kansas doctors and alumni everywhere into closer contact with the medical school, to carry news of additions and changes in the physical plant and the faculty as well as carry reports from various departments in the medical school about their facilities, programs, and research activities.

Dr. Glen R. Shepherd, a member of the faculty, is serving as editor of the Bulletin with Mr. Herb Weatherby, registrar, as associate editor.

Medicine in Europe

Editor's Note. This is the third of a series of articles prepared for the Journal by Dr. F. R. Croson, Clay Center, who is now traveling in Europe.

The medical service of Switzerland is unique. In fact, the same adjective will describe Switzerland itself.

I wrote about the "Krankenkassen" of Germany and Austria. The same general plan is in operation here except that it is purely voluntary. There are 1151 krankenkassen in Switzerland and their contracts all vary as to premium charged and the services which are given. They are not operated by the government but it does supervise them and the premiums are collected with the taxes.

There are no contracts which give full and complete coverage. Any individual who pays 8,000 francs or more tax is not eligible to belong to any krankenkasse. If his taxes are less than 8,000 francs, he may select the krankenkasse which appeals to him regarding premium and benefits, just as you would select health and accident insurance in the United States. It is purely cooperative, but the Europeans shy from that word and say that it is not.

The city of Berne has 123 krankenkassen and 38.1 per cent of its population belong to them, while 57.3 per cent of all Swiss belong to the health organizations.

There are two exceptions to the plan as I have outlined it. The city of Basle has a local socialistic government and every resident is compelled to belong to the municipal krankenkasse and receives full coverage. That is all the information I could secure concerning it as we did not visit Basle, but their plan of compulsion seemed to be very unpopular with the medical profession of the country. The other exception is that most large factories have their own krankenkassen to which the employees are compelled to belong and deductions are made from their salaries for its support. The benefits are usually small except for accident cases which have full coverage.

I am deeply indebted to Dr. W. von Aux of Berne for the information I received from him and also for a very delightful evening we enjoyed in their home. He told me that about 70 per cent of his practice is private and 30 per cent krankenkassen patients. But he is a man in his early sixties and has established an enviable reputation as an obstetrician and gynecologist. Here again the young doctor must content himself with krankenkassen patients until such time as he develops a reputation.

* * *

The system of medical care in Italy is quite unsatisfactory from the standpoint of both the patient and the doctor because of the economic

situation and administrative expense. The government "Mutual" is an organization to which all employees must belong. It is compulsory. Employees have four per cent of their wages deducted for this fund and it is matched by an equal amount from the employer. This fund is supposed to give full medical service, but the administration costs are above 25 per cent and there is much suspicion by the profession that there may be numerous "political leaks" from the fund. They are satisfied that the fund is large enough if it were properly managed. The result is that the fees are small. An abdominal operation rates a fee of from 1,500 to 3,000 lire—\$2.50 to \$5.00—and the hospitals are paid 1,500 lire a day per patient.

Every city or municipality has its own hospital and the deficit is made up by taxation, either local or state, or both. The municipal hospitals are poor and lack equipment and nurses, and many communities have no hospital service due to the fact that their buildings were destroyed during the war or the equipment was removed by the Germans.

I visited the University Hospital where I met Dr. Emilio Forti, a local surgeon who has had a lot of training in the United States. He was most gracious to me, and after he was done with his work there he took me to St. Marguerita Hospital, a private institution owned by a corporation of doctors and operated by a staff of 18 nuns. It is a beautiful, modern, new building with marble floors and stairs, tiled halls and operating rooms, balconies adjoining every room and the equipment is excellent! It has a 90-bed capacity, and I met a number of American patients who were most happy to see an American doctor. I cannot speak too highly of this hospital. It is as modern as any I have ever seen and has by far the best building and equipment (and the cleanest) I have seen in Europe.

There are no voluntary "Mutuals" in Italy for the 20 or 25 per cent who do not belong to the government mutual. A number have been organized but they have never been large enough to be established on a sound financial basis and have died a natural death.

Medical education is quite similar to that in our country. I was told that the students here get more theory but not as much practical work as our students get. To specialize one must serve four years in a specialty—some of which time is served in the medical school as an instructor and some in hospitals as an assistant. At the end of four years he is given an examination by a governing body in his specialty.

We have been very pleasantly surprised by Italy. It is a beautiful, clean country, the people are very friendly and helpful, the food is excellent, and the art, architecture and monuments of past civilizations are unsurpassed.

Greece is badly war torn and under a most severe handicap but very, very grateful to the United States for what help we have given them. They have a deduction system in which the employee contributes three-tenths and the employer seven-tenths of the cost. This goes to the Social Insurance Company which is under direct supervision. The actual percentage of deduction varies with the wages, but it is relatively high.

For this, the employee has full protection for emergencies and accidents and he and his family have partial protection for illnesses of an ordinary nature. They may report to the "sector" doctor for care and receive it for about 50 per cent of regular fees. A sector is an area comprising from 10,000 to 50,000 population, and in this area there will be seven to ten doctors. Prescriptions from the sector doctor are honored at the drug store for 10 to 12 per cent of the regular cost. All employees and members of their families are issued booklets by the government and any employment and the necessary deductions are entered in it. That system takes care of the individual who is occasionally employed.

Hospital facilities are sadly lacking due to the war—no room, no equipment, scarcity of drugs, and badly understaffed with nurses and doctors. It is very difficult to gain admission into a hospital, and patients desiring elective surgery must wait for years. All hospitals are government owned.

All men at 60 years of age and women at 53 are pensioned at a flat rate of 170,000 drachmae a month. This is only eight dollars! The fund also pays a death claim which is barely enough to pay for a very simple, modest funeral.

About 50 per cent of the Greeks are insured under the plan, but no employer or private business man is insured and there are no voluntary insurance groups.

* * *

In Cairo, Egypt, I spent a most pleasant morning at the University Hospital. Never, anywhere, have I been more welcome and never have I received more courteous, patient consideration than was afforded me by Dr. M. Z. A. Souidan and his associates! They were all grand to me and more than anxious to give me all the information they could, and they too were eager to know about the practice of medicine in our country.

The medical problem in Egypt is a big one due to the fact that a large percentage of the population is extremely poor. This naturally brings disease and more need for medical care than it is possible for the profession to provide.

They also have a system to protect the employees. The employer foots the bill as the employee contributes nothing. It is managed by insurance companies which are supervised by the government. The

benefits are full coverage for the employee only. It also affords some payment for loss of time due to illness or injury and payment for permanent disabilities.

They also have some voluntary associations which afford partial medical care to their members, depending on their contracts. These are on a strict vocational basis, i.e., a bankers' association, a lawyers' association, etc. These group insurances are rather popular.

Hospitals are divided into three groups, general hospitals, which are usually teaching institutions; "hygiene collections" which are medical units and do local diagnostic and treatment work, and "transformable hospitals" which are mobile and are set up in rural locations for temporary service only. They have 200 of these units which go about the rural areas giving service where it is needed. All hospitals are owned by the government and they give free hospitalization and medical care to the poor. There are a few small private hospitals in the large cities.

The hospitals are too few and too small. They suffer from lack of nurses, doctors and equipment but they are doing a wonderful work in spite of these handicaps. I saw evidence of good work and keen interest everywhere. The doctor-patient ratio in the hospitals is about one to 100.

The cry of the hospitals is that the patients come in too late and it gives them a high mortality rate and subjects them to much ignorant criticism from the public.

Medical education is very similar to ours. For a man to qualify as a specialist, he must serve two years in his specialty in a hospital and in the rural areas. To qualify as a Master of Surgery, Obstetrics, or any other specialty, he must serve four to six years as an assistant and his master's diploma makes him eligible to be on a teaching staff at a university. These specialties are controlled by an examining board of the faculty of medicine.

All doctors are employees of the government. They may be full time or part time men, and most of the faculty members also have a private office. The morning is spent in the hospital, the afternoon in the medical units, and private practice is carried on in the evenings. Only eight to ten per cent of the practice in Egypt is private work.

Before closing this article, I wish again to thank Dr. Souidan. Not only did he spend a morning with me but also gave me some of his private office time in the evening and then entertained the Crosons at his home. He and his wife plan to visit in the United States next year and I hope that many of you will have an opportunity to meet him.

* * *

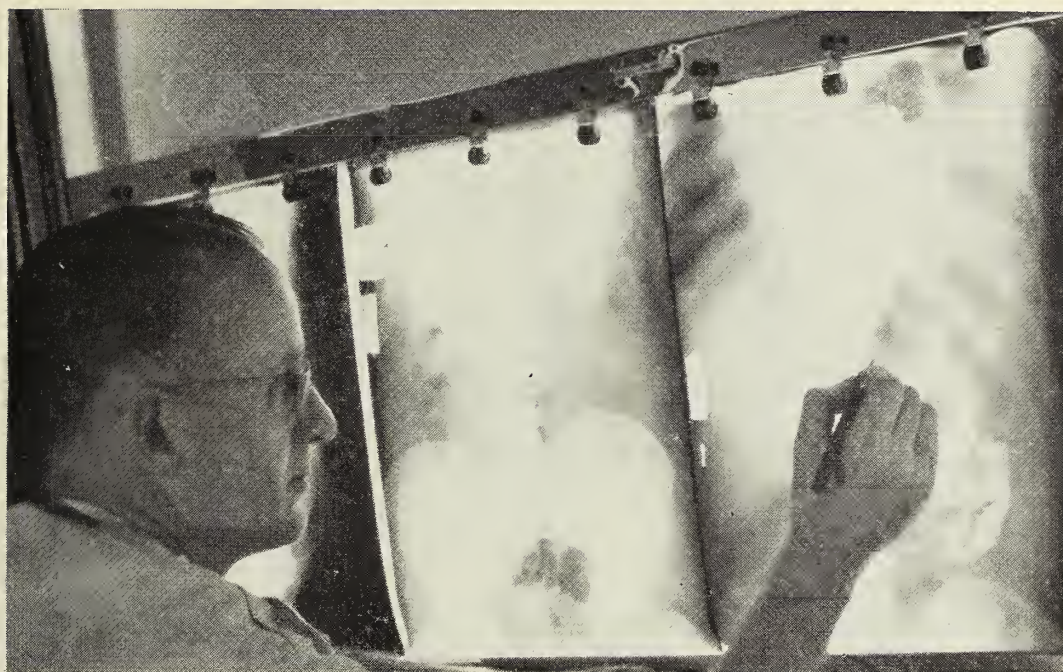
Turkey presents much the same picture as most of the southern European countries. Their deduc-

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RESEARCH IN THE SERVICE OF MEDICINE

tions are high—the employee contributes from 10 to 22 per cent of his wages and the employer 12 per cent to the Ministry of Public Health, a government institution. Most hospitals are owned by the government and nearly all in the large cities are teaching hospitals. Istanbul has five large hospitals and four medical schools. Aside from these four, it has two military medical schools which give the entire course and not just postgraduate work. The government also provides clinics for diagnostic and treatment work. Nearly all doctors are employees of the government.

The private hospitals are small and on a nationality basis such as French, German, English and American.

About 75 per cent of the Turks are insured under the government plan and the remainder are private patients.

New Research Instrument at K.U.

A new instrument, the ultramicrospectrophotometer, the only one of its kind in the world is now being used at the University of Kansas Medical Center by Dr. Robert E. Stowell, director of the University's cancer research program. Construction of the instrument, at the University of Kansas shops at Lawrence, required 18 months.

No accounting was made of the exact cost, but substantial amounts of two Atomic Energy Commission grants, one for \$40,000 and one for \$36,000, were used to finance the project. The instrument was patterned after a relatively crude photometer of that type Dr. Stowell worked with during studies in Sweden.

The ultramicrospectrophotometer is so delicate in adjustments that research workers can examine volumes of human cells so tiny that it would take one trillion specimens to make one cubic inch. It has a light source the size of a match, with a surface brightness one-fifth the surface brightness of the sun. The light produces so much heat that it must be cooled by circulating more than three quarts of water per minute.

It will be used to study the localization and amounts of chemical constituents of cells, and the principal subject of the first investigations will be nucleic acids, which substances comprise the genes of cells and have important regulatory action on heredity and growth. All living material contains such nucleic acids.

Research by Dr. Stowell and others seems to suggest that the nucleic acids may hold the key to the cancer problem, although it may take years to determine the exact role of nucleic acids in cancer. Because such substances absorb invisible ultraviolet

light of specific wave lengths, it is thought that the use of the special photometer, which measures that absorption, may lead to new facts.

The graphing of curves of absorption, from figures obtained by comparing the intensity of light which has passed through a cell with light which is by-passed into the measuring part of the instrument in its original intensity, gives the key to the amount and type of substance in the cell being examined. Thus researchers can follow the development of a cancerous growth in a cell.

The instrument, which weighs about 600 pounds and measures 12 feet in length, is set up on the second floor of the Hixon Laboratory on the campus.

Second Annual Mid-West Cancer Conference

The second annual Mid-West Cancer Conference will be held on Thursday, Friday and Saturday, January 19, 20 and 21, 1950, at Wichita, the Broadview Hotel. A banquet for physicians, their wives and guests is scheduled for Friday evening, January 20. This meeting, jointly sponsored by the medical society's Committee on Control of Cancer and the Kansas Division of the American Cancer Society is the only cancer conference scheduled for Kansas and the only mid-winter conference on this subject in the middle west. Physicians of neighboring states are cordially invited.

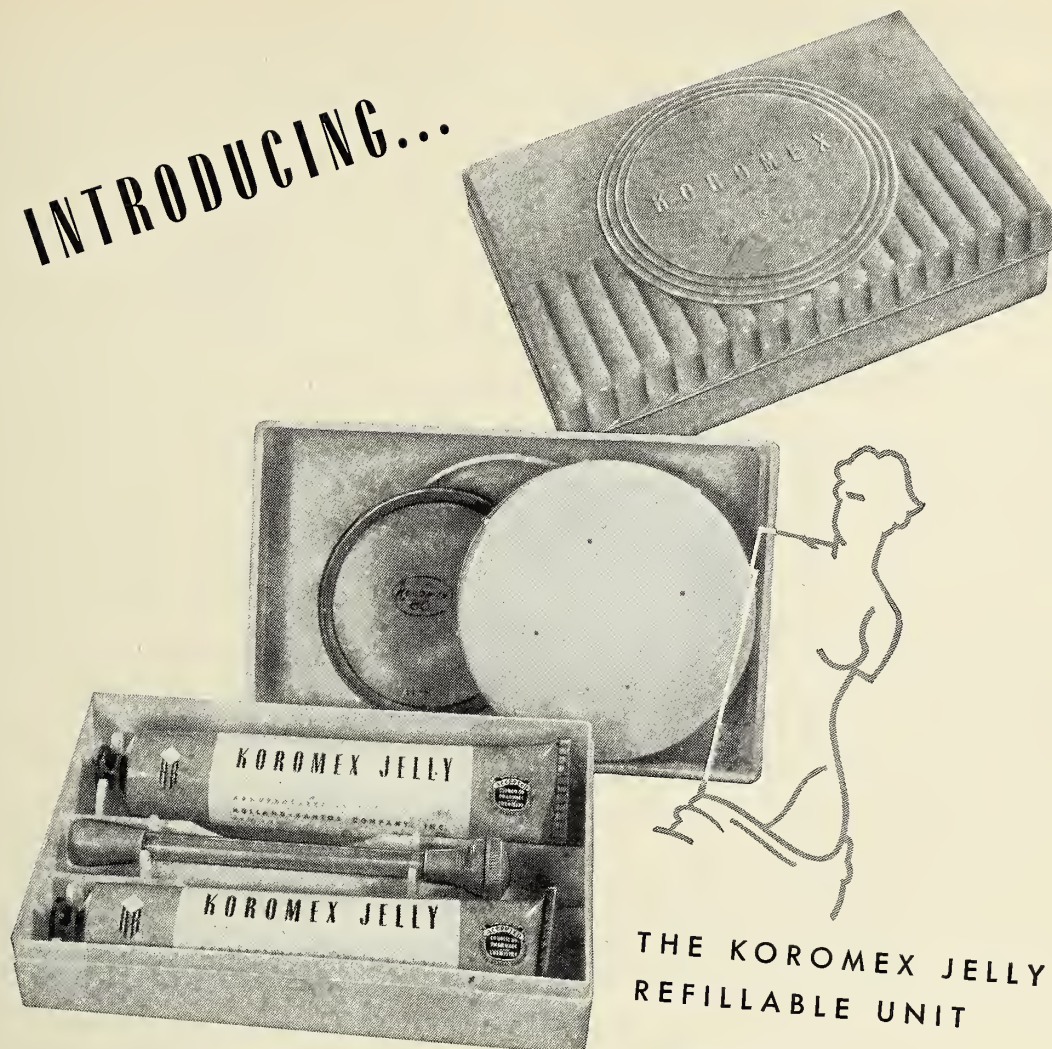
The scientific program is being arranged to include outstanding authorities in various fields of cancer work. As in the past, the program will be varied and designed for the physician in general practice. The banquet speaker will present a paper of interest both to physicians and the public.

A block of rooms has been set aside at the Broadview Hotel for the three days of the meeting, and it is recommended that reservations be made early. Further details and the complete program will be published in an early issue. There will be no registration fee, the only cost being the individual's hotel and meal expenses.

Grants to Three Kansans

Three Kansans received federal grants recently under a program designed to further research work on mental and nervous disorders, according to an announcement from the Federal Security Agency. Dr. Roger G. Barker of the University of Kansas, Lawrence, received \$24,360 for a field study of children's behavior, Dr. Eunice M. Leitch, Menninger Foundation, Topeka, was granted \$25,250 to study early phases of personality development, and Dr. George S. Klein, also of the Menninger Foundation, received \$9,050 for a clinical study of the relations of perceptual functioning to personality organization.

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KANSAS STATE BOARD OF HEALTH

Editor's Note. The following article, by Dr. F. Kenneth Albrecht, Director of the Division of Tuberculosis Control, is the first of a series to be supplied the Journal by the Kansas State Board of Health.

A New Plan of Tuberculosis Control For Kansas

The Division of Tuberculosis Control of the Kansas State Board of Health is embarking on a new dynamic plan of action to systematically eradicate tuberculosis in Kansas. Heretofore the mobile x-ray units have been scattered over the state and have x-rayed certain areas on the basis of local pressure rather than actual need for the services. We have x-rayed thousands of school children even though we knew we would find little, if any, tuberculosis in such groups. We have been forced to seek numbers, not tuberculosis. We have gone where we were invited and not where we were needed. Such inefficiency might have been excused if, in the process, education of the people and good will of the medical practitioners and medical societies was secured. Unfortunately, this did not always happen.

All agree the time has come to face facts and adopt a realistic plan which has as its prime objective the systematic eradication of tuberculosis in Kansas. Figure I shows a declining mortality rate which has been consistent over the years and now is at the all-time low of 13.0 per 100,000 population, a figure on a par with suicide as a cause of death! This should cause no undue optimism however because, due to our intensive mass x-ray case finding techniques, the case rate has steadily increased in the last decade. The problem today is obvious: our efforts should be directed toward the living and not the dead.

Case-finding by mass x-ray surveys is no longer a novelty or on trial. For that very reason we no longer attend county or state fairs. All agree that mass x-ray surveys are the most practical and economical method available for the detection of early, treatable tuberculosis. In any case-finding program the active cooperation of the private practitioner is absolutely essential, for it is he who will handle the case and dictate the treatment and follow-up after it has been brought to light by the mass x-ray surveys. Without his help, the job cannot be done and the whole program collapses. Practitioners are much overworked and we should not expect them to become detectives to track down cases of tuberculosis in their community.

Since tuberculosis is a public health problem it

becomes our problem to screen out suspected or positive cases of tuberculosis with as little delay as possible, and having done so, turn them over to the local physician and radiologist for follow-up and treatment. It is difficult to see how this program can be interpreted as "taking the bread out of the mouths of physicians." It definitely is no program of state or socialized medicine. Experience has shown that the usual and necessary follow-up work of these surveys has tremendously increased the business of both local physician and radiologist. A valuable by-product of these surveys is the increased awareness of individuals to the importance of a chest x-ray. Many physicians now note no reluctance on the part of their patients when they are advised to have a chest x-ray as a part of their yearly physical examination.

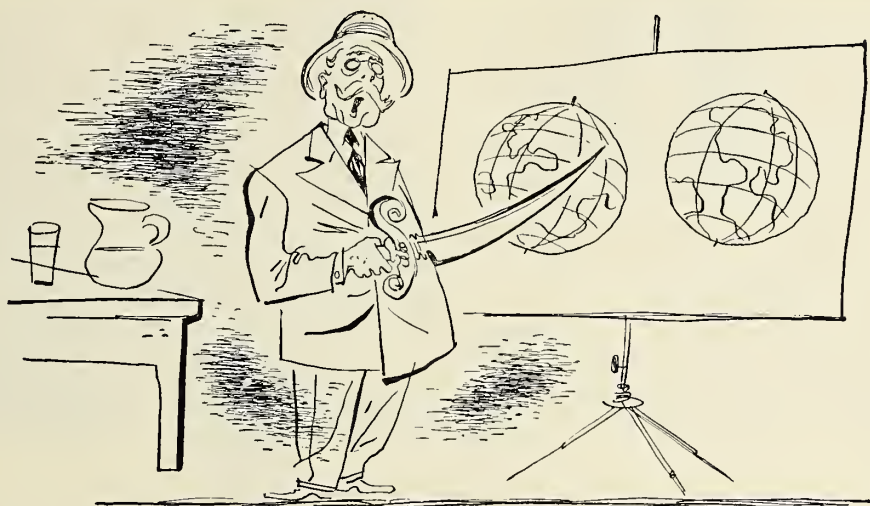
Factors Which Defeat the Program

There is much more to tuberculosis control than the taking of small 70 mm. films. The whole program fails if, following the first small film, prompt follow-up studies; including the securing of a complete history and additional laboratory and x-ray studies are not done. Many factors operate to defeat the success of these programs. The most common are: (1) the subject with suspicious small film findings chooses not to see his physician and so prevents the taking of a history and the necessary physical examination and follow-up studies; (2) the practitioner chooses to ignore the findings suggested by the small film; (3) follow-up films are ordered by the practitioner on non-tuberculous conditions, which are clearly demonstrated on the small films. If the subject pays a sizable sum for this film, which really was unnecessary, he has some cause for complaint. If, in addition this second film is not of diagnostic quality, and far inferior to the survey

Figure I

KANSAS Tuberculosis Cases and Deaths

Year	Cases	Deaths	Ratio Cases Per Death	Death Rate
1906	3,045	882	3.5	54.7
1916	1,510	970	1.6	56.5
1926	2,164	747	2.9	41.2
1936	890	547	1.6	28.7
1937	965	498	1.9	27.3
1938	629	428	1.5	22.8
1939	541	424	1.3	22.4
1940	757	448	1.7	24.8
1941	829	407	2.0	22.5
1942	698	441	1.6	24.5
1943	697	363	1.9	20.8
1944	689	356	1.9	19.7
1945	659	323	2.0	17.9
1946	780	304	2.6	17.0
1947	949	311	3.1	17.0
1948	1,098	239	4.6	13.0



WORLD TRAVELER . . . Dietary Dub

Food customs? He can describe the bill of fare in far away places some people never heard of. His personal eating habits, however, are those of most men in public life—a feast when the hectic schedule permits, just a bite here and there between times.

And like innumerable others who will not or cannot eat properly, these are the half-well, half-sick cases you recognize as subclinical vitamin deficiencies. Your first move in such cases is dietary reform, but when it comes to the right vitamin supplement, remember the name Abbott. In the complete Abbott line are single and multivitamin products . . . in liquid, capsule and tablet form . . . for oral and parenteral use . . . for supplemental and therapeutic dosage. Your pharmacist can supply them in a variety of package sizes.

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film and has to be retaken, he has more cause for just complaint—especially if he has paid, as some Kansans have, up to \$25 for such films; (4) the local physician takes the follow-up film, but for reasons best known to himself, keeps it in his desk for from six to 12 months before sending it in to the Tuberculosis Control Division for reading—and before doing anything about the case; (5) many of the follow-up films sent into the Division of Tuberculosis Control are of very poor diagnostic quality and in no way comparable to the first film. Thus we are no better off, if as well off, as we were six to 12 months earlier, and since we rarely ever receive one word of history with these films, we are still screening. This is no program at all!

In summary, too long a period ensues between the time the significant finding of the 70 mm. films are reported and the first follow-up film is taken to corroborate or substantiate the findings of

the first film. Too many of these follow-up films are of poor diagnostic quality, and very rarely, if ever, does a history accompany them. This is not fair to either: (1) John Q. Kansan, who was x-rayed; (2) the Tuberculosis Control Division, interested in a prompt follow-up and needing the results of the follow-up film for their records as well as additional information to ensure that the diagnosis is made and that the subject is placed under treatment; (3) the Tuberculosis Association who may have spent many thousands of dollars on films of very poor diagnostic quality; and (4) the practitioner, who while interested in the health of his community, should surely not be expected to see that suspected cases are brought under his treatment.

Details of New Program

A methodical survey of the entire state has been planned (see Figure IV). It began September 19 in Cheyenne and Rawlins Counties, located in the

Figure II KANSAS STATE BOARD OF HEALTH Division of Tuberculosis Control

Film No. _____
Survey _____

Dear Doctor:

Age _____ residing at _____
was recently x-rayed by our P-F unit. Since your name was furnished as the family physician, we are sending you the reports of our findings which include the first survey film, the follow-up films and the history secured by our Public Health Nurse.

First film:

Date _____

Impression From Survey Films

Follow-up films:

Date _____

Probably active _____ Questionably active _____ Probably inactive _____
Follow-up necessary _____ Follow-up Unnecessary _____

Recommendations

1. ☐ No further follow-up films necessary. May be unwise to needlessly alarm patient. Information may, however, be of some value for your records or to use as a base-line study.
2. ☐ Immediate thorough clinical study to establish a diagnosis—may include tuberculin test (intradermal), repeated sputum tests and gastric washings on the fasting stomach. Tuberculin testing of patient's contacts, and children in the home often aids in establishing a diagnosis. X-ray all positive reactors.
3. ☐ Tuberculin test advised to exclude possibility of tuberculous infection. If positive, suggest another chest film in three months with periodic films yearly for several years. If negative, reread in 1 year.
4. ☐ Reread in _____ months for comparative study with previous films.
5. ☐ Reread in _____ months to determine future course.
6. ☐ Lateral films necessary for diagnosis.
7. ☐ Anterior oblique films more informative than another P-A film.
8. ☐ Fluoroscopic study advised.
9. ☐ Consider barium swallow ☐ or G-I series ☐ to aid diagnosis.
10. ☐ Other: _____

(cut on this line)

To

TB Control Division
1800 E. 21st Street, Topeka, Kansas

Film No. _____
Survey _____

☐ I (have) (have not) examined _____
☐ My diagnosis based on further clinical study is: _____

☐ I (do) (do not) prefer that the Public Health Nurse call on this patient
☐ This patient (will) (will not) be under my care

M.D.

Fill in above form and return within 60 days—if this person has not reported to you in 60 days, please return this form so that further effort can be made to secure his cooperation with you.

Respectfully, _____ M.D.



if she is one of your patients...

...She depends on your help for a speedy return to gainful occupation. Women seeking employment who are nervous, apprehensive and generally distressed by symptoms of the climacteric, may find it difficult to meet competition. "Premarin" offers a solution. Many thousand physicians prescribe this naturally-occurring, oral estrogen because...

1. Prompt symptomatic improvement usually follows therapy.
2. Untoward side-effects are seldom noted.
3. The sense of well-being so frequently reported tends to quickly restore the patient's confidence and normal efficiency.
4. This "Plus" (the sense of well-being enjoyed by the patient) is conducive to a highly satisfactory patient-doctor relationship.
5. Four potencies provide flexibility of dosage: 2.5 mg., 1.25 mg., 0.625 mg. and 0.3 mg. tablets; also in liquid form, 0.625 mg. in each 4 cc. (1 teaspoonful).



While sodium estrone sulfate is the principal estrogen in "Premarin," other equine estragens...estradiol, equilin, equilinenin, hippulin...are probably also present in varying amounts as water-soluble conjugates.

"PREMARIN"



ESTROGENIC SUBSTANCES (WATER-SOLUBLE)
also known as CONJUGATED ESTROGENS (equine)

Ayerst, McKenna & Harrison Limited 22 East 40th Street, New York 16, New York

upper northwest corner of Kansas. Two large mobile x-ray units are travelling side by side in adjacent counties. They will move from county to county until the first two rows of counties have been covered. They will then move over to Seward and Meade Counties and proceed up the third and fourth tier of counties until the Nebraska border is reached. This will continue on until the winter months when it would seem practical to offer the services to large urban areas in which case certain

features of the program will be altered to conform to the wishes of the local medical societies. By this method the entire Kansas population can be screened in less than three years.

The Kansas Tuberculosis Association will send a competent health educator into each county in ample time before the survey, to assist the community with arrangements for the coming of the survey. At least six weeks to two months is necessary for adequate preparation. No county will be sur-

Figure III

CHEST X-RAY SURVEY QUESTIONNAIRE

Film No. _____
 Survey _____
 Print _____
 your _____
 Name _____

How old are you? _____ Where were you born? _____ What is your occupation? _____
 How long have you lived in Kansas? _____ Locality of longest residence? _____

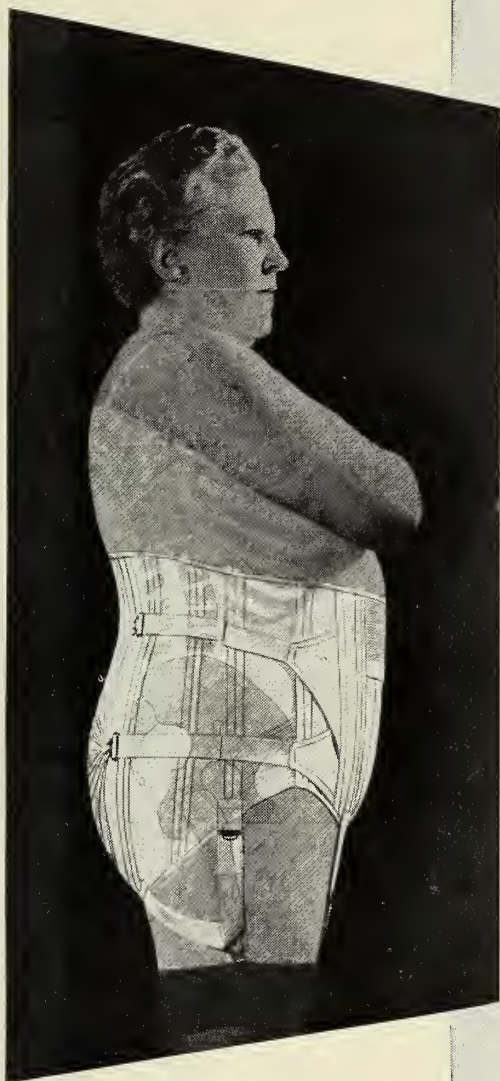
DIRECTIONS: Answer all questions. If not sure—guess. This will give the doctor who reads your film a better understanding as to the cause of the shadows he sees on your x-ray film.

If you can answer YES to the question, put a circle around YES
 If you have to answer NO to the question, put a circle around NO

1. Have you ever worked for long periods around dust?	Yes	No
2. Have you ever worked in a mine or quarry?	Yes	No
3. Have you ever worked around livestock?	Yes	No
4. Do you have to clear your throat frequently?	Yes	No
5. Do you often feel a choking lump in your throat?	Yes	No
6. Often have bad spells of sneezing?	Yes	No
7. Is your nose continually stuffed up?	Yes	No
8. Does your nose run constantly?	Yes	No
9. Have you at times had bad nose bleeds?	Yes	No
10. Do you catch cold easily?	Yes	No
11. Do you frequently suffer from heavy chest colds?	Yes	No
12. When you catch a cold, do you always have to go to bed?	Yes	No
13. Do frequent colds keep you miserable all winter?	Yes	No
14. Do you get hay or rose fever?	Yes	No
15. Do you suffer from asthma?	Yes	No
16. Are you troubled by constant coughing?	Yes	No
17. Have you ever coughed up blood?	Yes	No
18. Do you sometimes have severe soaking night sweats?	Yes	No
19. Have you ever had a chronic chest condition?	Yes	No
20. Have you ever had T. B. (Tuberculosis)?	Yes	No
21. Did you ever live with anyone who had T. B.?	Yes	No
22. Have you ever had pleurisy?	Yes	No
23. Have you ever had pneumonia?	Yes	No
24. Have you ever been treated for cancer?	Yes	No
25. Is this your first x-ray of the chest?	Yes	No
26. Has a doctor ever said your blood pressure was too high?	Yes	No
27. Has a doctor ever said your blood pressure was too low?	Yes	No
28. Do you have pains in chest or heart?	Yes	No
29. Are you bothered by thumping of the heart?	Yes	No
30. Does your heart often race like mad?	Yes	No
31. Do you often have difficulty in breathing?	Yes	No
32. Do you get out of breath long before anyone else?	Yes	No
33. Do you ever get out of breath just sitting still?	Yes	No
34. Do your ankles swell badly near the end of the day?	Yes	No
35. Do cold hands or feet trouble you even in hot weather?	Yes	No
36. Do you get frequent cramps in your legs?	Yes	No
37. Has a doctor ever said you had heart trouble?	Yes	No
38. Does heart trouble run in your family?	Yes	No
39. Do you often get spells of complete exhaustion?	Yes	No
40. Does working tire you out completely?	Yes	No
41. Does every effort tire you out?	Yes	No
42. Are you definitely <i>under</i> weight?	Yes	No
43. Did a doctor ever say you had a goitre?	Yes	No
44. Have you ever had any organ or gland removed for cancer?	Yes	No
45. Are there any small children in the home?	Yes	No
46. Do you consider yourself to be in good health?	Yes	No

Print your family doctor's name _____
 Address _____

WHEN OBESITY IS A PROBLEM



Clinicians have long noted that the forward bulk of the heavy abdomen with its fat-laden wall moves the center of gravity forward. As the patient tries to balance the load, the lumbar and cervical curves of the spine are increased, the head is carried forward and the shoulders become rounded. Often there is associated visceroptosis. Camp Supports have a long history among clinicians for their efficacy in supporting the pendulous abdomen. The highly specialized designs and the unique Camp system of controlled adjustment help steady the pelvis and hold the viscera upward and backward. There is no constriction of the abdomen, and effective support is given to the spine. Physicians may rely on the Camp-trained fitter for precise execution of all instructions.

If you do not have a copy of the Camp "Reference Book for Physicians and Surgeons", it will be sent on request.

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veyed without the invitation and approval of the county or local medical society. In the event there is no county or local medical society, approval of the local health officer will suffice.

The age limit of those to be x-rayed is being raised to 16 years, since it is not practical or economical to x-ray younger school children, the yield

being almost nil. Stress will be put on x-raying adults and especially those in the older age groups. Positive tuberculin reactors, no matter what age, will of course be x-rayed.

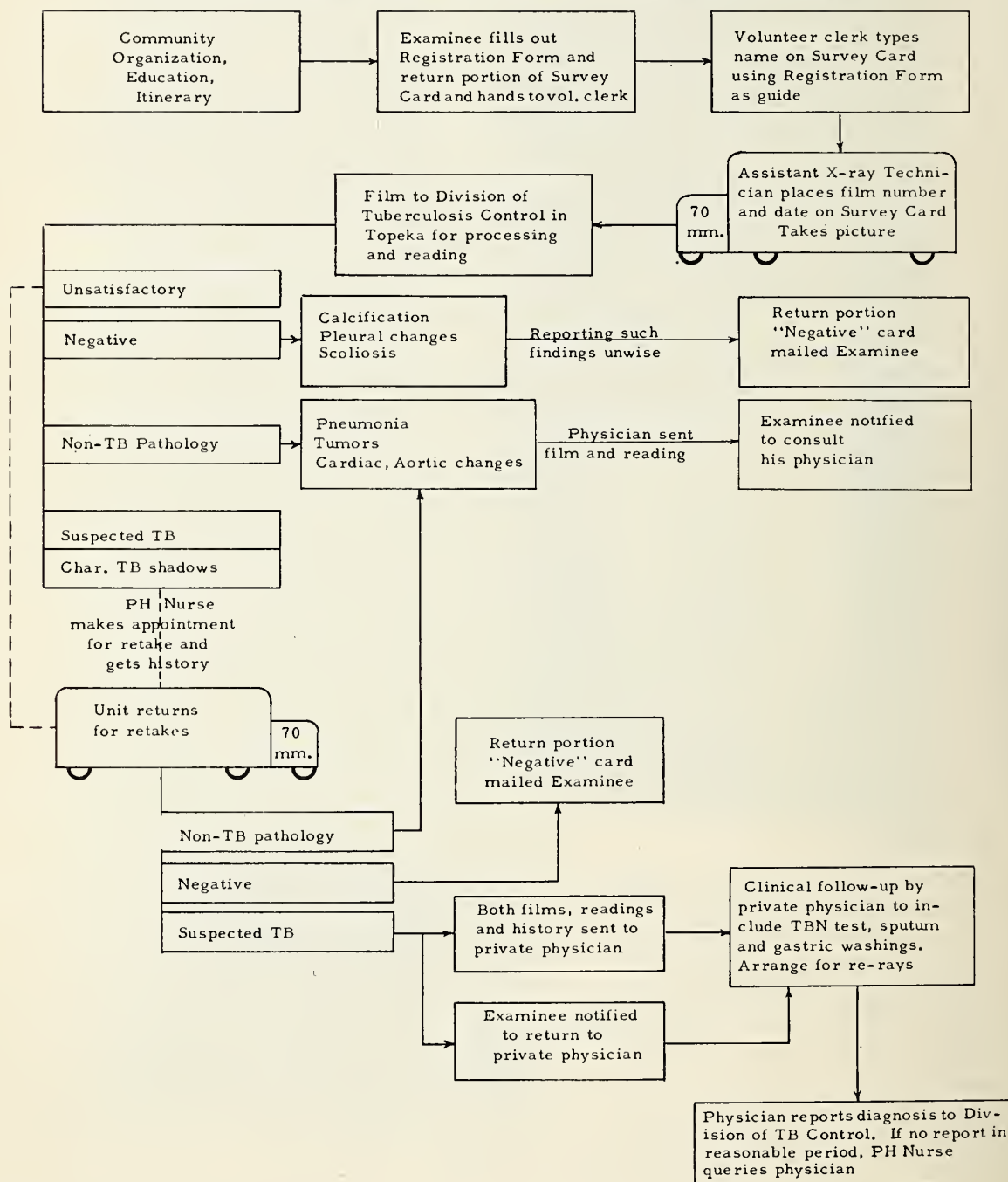
Follow-up Plans: Films and History Sent to Practitioners

Following the initial visit of the survey unit, the 70 mm. film will be read within 72 hours by

Figure IV

OPERATIONAL FLOW CHART OF MASS X-RAY SURVEYS

KANSAS STATE BOARD OF HEALTH DIVISION OF TUBERCULOSIS CONTROL





**much
to
recommend
it**

SOLGANAL^{*}
(aurothioglucose)



Schering's aurothioglucose has much to recommend it for the treatment of active rheumatoid arthritis. Water soluble, but suspended in oil to provide prolonged absorption, it is effective in small dosage, frequently inducing remissions in early acute phases of the disorder.

in active rheumatoid arthritis

Marked improvement has been reported in "50 to 60 per cent of patients, moderate improvement in 20 to 25 per cent. . . ."¹ Among 1000 patients treated recently with SOLGANAL, there were no fatalities and few instances of severe toxicity.¹

1. Rawls, W. B.: New York Med. (no. 15) 3:19, 1947.

*®

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CORPORATION · BLOOMFIELD, N. J.



SOLGANAL

the Division of Tuberculosis Control film readers in Topeka. A film report on those believed to have non-tuberculous pathology, *including the actual film* will be sent to the doctor named by the one x-rayed (See Figure II). The names of those whose films show findings suspicious for tuberculosis will immediately be sent to the Tuberculosis Control Division nurse operating in the field, who will make appointments with these people for retakes. In about three weeks after the initial visit of the unit, it will return to a few designated places in each county. This is an innovation and will accomplish: (1) retakes of films that were unsatisfactory on the first visit; (2) films on those who for some reason or other such as bad weather were unable to have their x-rays taken on the first visit; (3) follow-up films on those whose first film was suspicious for tuberculosis. These follow-up films (70 mm.) will corroborate the first impression and, in addition, the nurse will secure a history (see Figure III) which the patient can complete in about five minutes.

It is not our opinion alone, but the opinion of the country's leading radiologists that for over-all efficiency, the 70 mm. film is comparable to the 14 x 17 inch or four by five inch film for survey and screening purposes. It is many times more effective than the large majority of 14 x 17 inch films which have been taken for this purpose and sent to us for reading. We have no quarrel with physicians who still want a large 14 x 17 inch film for their own purposes. It is no longer, however, a part of our program. The public health nurse with the unit will forward to the Division of Tuberculosis Control, the history completed by the patient and this, plus the first small film and the retake film will be sent to the physician so designated by the one x-rayed. These films and history become the property of the private physician. It is our intention to take films in full expiration and full inspiration on all those called back for retakes. In the event no physician has been named by the subject, such information will be sent to the county health officer.

No additional films will be taken by this unit on its second visit to the community on the many cases of non-tuberculous pathology which are sure to be found. We will, however, send the physician named by the subject the small film with our reading of this film. Any further films on such subjects will be taken strictly at the judgment of the local physician and by whomsoever he chooses. This deliberately limits our follow-up film studies to those suspected of having tuberculosis. This should remove the doubts of some who believe this is a program of socialized medicine. Subsequent films, so necessary for the follow-up of the tuberculous cases, will be done locally by the local physician or by whomsoever

he chooses and the cost borne by the patient.

A third mobile unit will have as its project the coverage of all state, public, and private institutions of higher learning. Not only will all students, faculty members and employees of these institutions receive chest x-rays but in addition, an elaborate scientific display covering all phases of tuberculosis will be set up at these various schools. In addition, films and special talks will be scheduled as a part of this program.

We particularly abhor the mention of the phrase "free x-ray" in connection with these surveys. They are not free, since they are maintained and paid for by the taxes of the citizens of Kansas as well as by the sale of Christmas Seals. Reports on negative films will be sent directly to the individuals concerned. On cases we regard as positive or suspicious for tuberculosis, letters are sent directing them to report to their private physician for further study by him, after we have sent him the films and the case history. All positive findings will be sent to the private physician with the films as heretofore described.

Under this proposed plan of operation, a very thorough job of uncovering tuberculosis can be done in Kansas. More important, the matter can be done within a short time and not prolonged over many months during which time more people are being infected by the open cases of tuberculosis. There is no doubt that by our combined cooperation, the eradication of tuberculosis in Kansas can and will be accomplished.—*F. Kenneth Albrecht, M.D., Director, Division of Tuberculosis Control, Kansas State Board of Health.*

Cancer Research Grant to K.U.

A grant of \$200,000 for one wing of a two-story building for laboratory and clinical research at the University of Kansas Medical Center was included with eight other grants totalling \$3,250,000 announced recently by the Federal Security Agency. All are for the construction of cancer research facilities.

Academy of Medicine Meets

A meeting of the Kansas Academy of Medicine was held in Emporia October 9. Special honors were conferred on Dr. Clyde W. Miller, Wichita, past president of the Academy, who was presented a gold key.

The next meeting of the group will be held at one o'clock on Sunday, December 11, at Manhattan. All members of the organization and other physicians in that community are invited to attend.

CLASSIFIED ADVERTISEMENTS

WANTED: Young surgeon to work with three man group in midwest. Surgical Board Members, doing large volume—excellent experience and instruction. Good salary, depending on qualifications. Write the Journal 10-49.

WANTED—Young Gentle graduate of Class A medical institution to serve as resident physician in 150-bed sanatorium for nervous and mental disorders. Training in psychiatry preferred but not essential. Excellent salary. If interested in employment under excellent conditions, near a thriving Southern city, write qualifications and date of availability to Dr. Orin R. Yost, Edgewood Sanatorium, Box 539, Orangeburg, S. C.

FOR SALE—RCA cartridge loading wire recorder, foot switch and two cartridges included. Retail value approximately \$200.00. 1948 model, as good as new, has had little use. Will sell for \$125.00. Write the Journal 13-49.

STAFF PHYSICIAN WANTED. Institution offers good salary, all equipment and facilities. Write the Journal 14-49.

SURGEON AVAILABLE. General surgeon wants location in clinic group or information on location for individual practice. Write the Journal 15-49.

Nationally advertised Surgical Supplies and Equipment have been placed at Topeka, Joplin, Kansas City and St. Joseph for your convenience by—

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Management by Dr. W. F. Goetze, a member of the American Medical Association, assures intelligent servicing of your orders.

POSTGRADUATE COURSE IN THERAPEUTICS

December 12, 13, 14 & 15, 1949

UNIVERSITY OF KANSAS MEDICAL CENTER, KANSAS CITY, KANSAS

FACULTY

Guest Instructors:

GARFIELD G. DUNCAN, M.D., Clinical Professor of Medicine, Jefferson Medical College, Philadelphia, Pa.
 MARY JANE GERKIN, B.S., Dietitian, Alfred Benjamin Clinic, Kansas City, Mo.
 SARA M. JORDAN, M.D., Head of Department of Gastro-Enterology, The Lahey Clinic, Boston, Mass.
 HELEN McLACHLAN, M.A., Assistant Professor of Dietetics, St. Louis University, St. Louis, Mo.
 EARL W. NETHERTON, M.D., Head of Department of Dermatology and Syphilology, The Cleveland Clinic Foundation Hospital, Cleveland, Ohio.
 THEODORE E. WOODWARD, M.D., Associate Professor of Medicine, University of Maryland School of Medicine, Baltimore, Md.
University of Kansas Faculty:
 WILLIAM B. BARRY, M.D., Instructor in Otorhinolaryngology.
 LLOYD H. COALE, M.D., Assistant in Medicine.
 MARY M. DANIELS, B.S., Assistant Dietitian of Food Service.
 CHARLES C. DENNIE, M.D., Professor of Dermatology.
 MICHAEL M. DONOVAN, M.D., Instructor in Orthopedic Surgery.
 FRANK X. DWYER, M.D., Assistant in Dermatology.
 STANLEY R. FRIESEN, M.D., Assistant Professor of Surgery.
 THOMAS B. HALL, M.D., Assistant Professor of Dermatology.
 WILLIAM L. HEMPHILL, M.D., Resident in Dermatology.
 GEORGE V. HERRMAN, M.D., Assistant Professor of Pediatrics.
 MORTON JACOBS, M.D., Associate in Psychiatry and Neurology.
 PAUL H. LORHAN, M.D., Clinical Professor of Surgery (Anesthesiology).
 RALPH H. MAJOR, M.D., Professor of Medicine.
 HERBERT C. MILLER, M.D., Professor of Pediatrics.
 DAVID B. MORGAN, M.D., Instructor in Dermatology.
 ROBERT J. MURPHY, M.D., Assistant in Dermatology and Syphilology.
 C. F. NELSON, Ph.D., M.D., Professor of Physiological Chemistry.
 PATRICIA PAYER, B.S., Therapeutic Dietitian.
 EDWIN L. PFUETZE, M.D., Instructor in Dermatology.
 DONALD L. ROSE, M.D., Associate Professor of Physical Medicine.
 BERDENA ROSENOW, B.S., Dietitian of Patient Food Service.
 RICHARD L. SUTTON, JR., M.D., Professor of Dermatology.
 VIRGINIA TOEWS, M.A., Educational Dietitian.
 WILLIAM L. VALK, M.D., Professor of Surgery (Urology).
 NORMA JEAN WINN, B.S., Clinic Dietitian.

SUBJECTS TO BE DISCUSSED

A Consideration of the Feeding Problems in Pediatric Practice. Protein Metabolism.
 Nutritional Considerations in the Management of Hepatic Diseases.
 The Newer Concepts in the Dietary Management of: Diabetes, Obesity, Cardio-Vascular Diseases, Colitis, Malnutrition, and Pregnancy.
 Demonstration of Formula Preparation.
 The Newer Consideration Concerning Nutrition in the Treatment of Chronic Medical Conditions.
 The Results in Later Life of Faulty Eating Habits in Early Childhood.
 Ambulatory Treatment of Sprains and Minor Fractures.
 The Management of Peptic Ulcer.
 An Evaluation of Newer Treatments for Arthritis.
 The Uses of Novocaine in the Treatment of Diseases.
 The Treatment of Functional Gastro-Intestinal Disease.
 Recent Advances in the Use of Antibiotics in Gastro-Intestinal Diseases.
 Penicillin Treatment of Syphilis.
 The Newer Antibiotics in Rickettsial Diseases.
 The Newer Antibiotics in Urology.
 The Uses and Abuses of Antibiotics in Upper Respiratory Diseases.
 The Use of Chloromycetin and Aureomycin in Certain Gram-Negative Infections—Typhoid Fever, Brucellosis, Tularemia and Influenza Meningitis.
 Surgical Sympathectomy as a Therapeutic Measure in Various Diseases.
 Functional Skin Diseases.
 The Differential Diagnosis and Treatment of the Eczemas.
 Dermatology Clinic (Case Presentations of All Types of Skin Diseases, With Diagnostic and Treatment Problem Discussions).

BLUE SHIELD

District Physician Committees Being Formed

Following the October meeting of the state-wide Physician Relations Committee in Salina, the next step in the program of Blue Shield relations with doctors is now being developed. This step is the organization of District Liaison Committees for each of the twelve councilor districts. Each member of the state-wide committee is making appointments to his own district committee, and meetings in each district are now being arranged.

According to Dr. L. W. Reynolds, Hays, chairman of the state-wide committee, the functions of the local district committees are outlined as follows:

1. To serve as listening posts for complaints and misunderstandings in each area of the district.
2. To help in the adjustment of complaints by interpretation of Blue Shield acts or by support of complaints to Blue Shield if they seem justified.
3. To help in conducting surveys by mail.
4. To foster local meetings with county societies and physicians in each area with the Blue Shield staff.
5. To lend public support to Blue Shield community enrollments.
6. To serve as a center of authentic Blue Shield information in each area.
7. To hold occasional district meetings for the purpose of expressing the views of physicians in the district, with a view to gradual modification of the Blue Shield program in the light of experience.

* * *

Favorable Decision for Members of Long Standing

The new Blue Shield contract goes into effect on December 1, but not for all members on that date. Members whose dues have been paid on a quarterly, semi-annual or annual basis beyond December 1 will still be under the old contract. This is because of a clause in the old contract not permitting a change until the end of the paid-to-period.

In a recent decision by the Blue Shield Executive Committee, members who are paid beyond December 1 will be given all the advantages of the new contract, such as x-ray therapy for malignancies, payment for non-surgical illness beginning with the second hospital day and the higher anesthesia allowances. On the other hand, these members will receive the regular services of the old contract until their change-over dates. This means that these members will still be entitled to the minor accident provision of the old contract, the \$35 tonsil and adenoid payment, pre-natal care in obstetrics, the extra \$15 allowance for episiotomies, and payment for minor cutting procedures and consultations.

It is estimated that 90 per cent of the Blue Shield

members will be under the new contract by March 1, 1950. Thus the problem of distinguishing the old contract members will be a diminishing one.

Prior to December 1, each Blue Shield member will receive a notice card showing the date his own contract will change. Doctors will thus be able to tell whether the member is entitled to the old services by asking the member for the date on the notice card. It should be remembered that *all* members will receive the added services of the new contract on December 1.

Waiting periods of eight months membership for only two conditions remain in the new contract, namely, obstetrics and tonsil and adenoid operations. This new waiting period provision is effective for all members on December 1.

* * *

Expanded Enrollment Program

A program of county and community-wide enrollment which will embrace the entire Kansas Blue Cross-Blue Shield area is currently in progress. The aim is to provide an opportunity for all residents to enroll, except those 65 years and over who are retired. This latter group, it is hoped, may be included in areas where the percentage of enrollment is high enough to sustain the additional use of service made by older people.

Some 35 county-wide and community enrollments are already scheduled and others are being set up over the state. These campaigns will offer enrollment opportunity to people who are not employed in companies where five or more work. The stepped-up program is in answer to the demand from people throughout the state, and Blue Cross-Blue Shield have expanded their field staff to meet this demand.

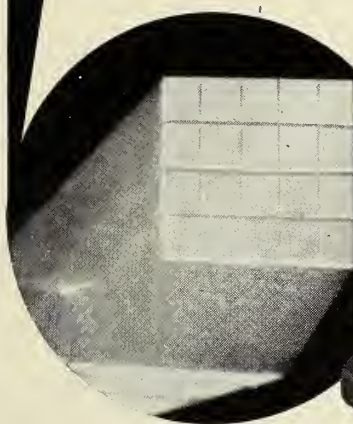
County medical societies are sponsoring advertisements endorsing these campaigns, and individual physicians are lending active personal support to the organizational work of making the campaigns successful.

Present enrollment in Kansas Blue Shield is 160,000 members. Enrollment in the Kansas Blue Cross is 360,000 members.

Heart Research Grants of \$700,000

Approximately \$700,000 has been allocated for heart research this year by the American Heart Association and its affiliates, according to the American Heart, new quarterly publication of the association. Awards from the national office totalled \$250,000 in 1949, and funds spent by affiliates, the New York and Chicago Heart Associations, made up the rest. A minimum of \$380,000 from 1949 campaign funds has been earmarked for future research awards.

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OF LIGHT
Shows What
Rexair Can Do**



Next time you house-clean, pause a moment by a sunlit window. You will see thousands of dust motes floating in the beam.

Light does not produce this dust. It is everywhere in the air you breathe. Conventional methods of cleaning often fail to eliminate it, by letting dust filter back into the air you breathe.

Wouldn't you like to clean *clean*? Wouldn't you like to know that the dust you remove from floors, carpets and furniture is eliminated from your house forever? You can—with Rexair.

Rexair has no bag. It uses a pan of water to trap dust and dirt. Wet dust cannot fly, and dust cannot escape from Rexair's water bath. You pour the water down the drain, and pour the dirt away with it.

REXAIR DIVISION, MARTIN-PARRY CORP.

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FREE BOOK—Send for this colorful, illustrated 12-page book. Shows how Rexair does all your cleaning jobs, and even "washes" the air you breathe. Ask for all the copies you can use. No obligation.



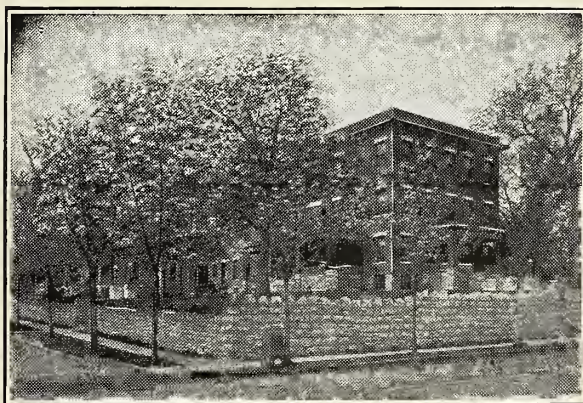
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Normal
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HERMON S. MAJOR, M.D.
Medical Director

HERMON S. MAJOR, JR.
Business Manager

ACTIVITIES OF MEMBERS

Dr. C. V. Black, Pratt, recently completed a postgraduate course in surgery at Chicago University.

* * *

Dr. F. C. Beelman, executive secretary of the Kansas State Board of Health, was elected a member of the executive committee of the Association of State and Territorial Health Officers at a meeting held in Washington last month.

* * *

Dr. James Hibbard, Wichita, attended the International Neurological Congress in Paris last month and then went to Stockholm, Sweden, for a refresher course under a noted brain specialist, Dr. Alevicrona.

* * *

Dr. John A. Grove, orthopedic surgeon in Newton, was recently elected a member of the consultant staff of Allen Memorial Hospital in El Dorado.

* * *

Dr. D. G. Holcomb, Liberal, addressed the Lions Club in that city recently on blood types and transfusions.

* * *

Dr. L. B. Mellott, Bonner Springs, will serve as acting coroner in Wyandotte County until a successor to the late Dr. C. W. McLaughlin is appointed.

* * *

Dr. Jack Dysart, Sterling, has returned from Chicago where he took a postgraduate course in surgery at the Cook County Hospital.

* * *

Dr. R. J. Beal, Fredonia, became a fellow of the American College of Surgeons at a meeting held this month in Chicago.

* * *

Dr. R. Y. Strohm, Fort Scott, received a civic service award from the Fraternal Order of Eagles of Fort Scott at a meeting held in September.

* * *

Dr. H. O. Hardesty, Jennings, has completed 50 years in the practice of medicine, and, although he is 80 years old, continues to practice. He has been serving the Jennings community for the past 47 years.

* * *

Dr. N. A. Burkett, Council Grove, was recently named health officer for Morris County to succeed Dr. Roy F. Drake, who has gone to Kansas City for postgraduate work in surgery.

* * *

Dr. Paul B. Leffler, Pittsburg, has been named coroner of Crawford County.

* * *

Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, was guest speaker at a meeting of the Overland Park Cooperative club last month. He discussed the nation's health problems.

* * *

Dr. Haddon Peck, St. Francis, president of the Kansas Medical Society, was appointed a member of the Kansas State Board of Health by Governor Frank Carlson last month. He will fill the unexpired term of Dr. Hugh Hope, Hunter, who resigned, and the term will expire March 27, 1950.

* * *

Dr. and Mrs. E. A. Evans, Conway Springs, held open house on September 29 in celebration of the completion of 48 years of active practice by Dr. Evans.

* * *

Dr. William M. Brownell, recently of Arkansas City, is now associated with his father, Dr. Morton

DEATH NOTICES

CHARLES OSCAR MAYS, M.D.

Dr. C. O. Mays of Liberal, a member of the Meade-Seward Medical Society, died on his 68th birthday, September 1. He was graduated from Meharry Medical College in 1907 and came to Kansas shortly afterward, locating first at Elkhart and moving to Liberal about 20 years ago. He continued to practice there until his death, specializing in surgery.

* * *

NORRIS LUETSCHER RAINEY, M.D.

Dr. N. L. Rainey, 54, an active member of the Sedgwick County Medical Society, died at his home at Wichita September 26. After his graduation from the University of Kansas School of Medicine in 1927, he interned at St. Francis Hospital, Wichita, and began practice there the following year. In 1945 he served as president of his county medical society, and this year was serving as a member of the board of directors.

* * *

JOHANN N. DIETER, M.D.

Dr. J. N. Dieter, Abilene, died at his home October 9 at the age of 68. He had practiced in Abilene from the time of his graduation from the University Medical College of Kansas City in 1904 until his retirement in 1941, except for periods spent in postgraduate work, part of which was taken in Vienna. He was an honorary member of the Dickinson County Medical Society.

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* * *

Dr. L. Lafe Bresette, Kansas City, president of the Chamber of Commerce of that city, spoke at the first fall meeting of the Women's Chamber of Commerce. The title of his address was "A Kansas City, Kansas, Doctor's Odyssey."

* * *

Dr. E. H. Johnson, Peabody, was guest of honor at a dinner given by the American Legion of that city in September. Dr. Johnson has served three terms as commander of the Legion post in Peabody.

* * *

Dr. Harle Barrett, formerly of Topeka, has enrolled for a year's postgraduate work at Harvard University in the School of Public Health.

* * *

Dr. E. B. Struxness, formerly of Hutchinson, is now associated with the Trueheart Clinic at Sterling.

* * *

Dr. James A. Wheeler, Newton, was guest speaker at a meeting of the Kansas Society of Medical Technologists held at Newton October 9.

* * *

Dr. T. L. Foster of the Hertzler Clinic, Halstead, will return in December from San Francisco where he is taking a refresher course at the Langley Porter Clinic.

* * *

Dr. L. S. Nelson, Jr., Salina, has been named health officer of Saline County to fill the vacancy created by the resignation of Dr. John C. Mitchell.

* * *

Dr. Oscar W. Davidson, Kansas City, announces that Dr. John Neal Martin is now associated with him in the practice of urology. Dr. Martin was graduated from Creighton University in 1943. After a residency at St. Margaret's Hospital in Kansas City he spent two years in the service, and most recently has been practicing in Unionville, Missouri.

COUNTY SOCIETIES

The Jefferson County Medical Society was reorganized at a meeting held October 8 at the home of Dr. B. M. Stevens of Oskaloosa. Those present were: Dr. Stevens, Dr. F. W. Huston of Winchester, Dr. C. J. Bliss of Perry, Dr. R. F. Freeman of Nortonville, Dr. W. C. Woods of Valley Falls, and Dr. R. R. Snook of McLouth.

* * *

Members of the Riley County Society were hosts to the Golden Belt Medical Society at a meeting held at the Sky-Line Club, Manhattan, October 6.

Three speakers from the University of Kansas Medical Center presented the scientific program. Dr. La Verne B. Spake, clinical professor of eye, ear, nose and throat, discussed "Cause and Treatment of Nosebleed;" Dr. William Valk, professor of urology, spoke on "Treatment of Urinary Tract Infections," and Dr. W. T. Sirridge, instructor in medicine, gave a paper on "Hypo-ovarianism with Special Emphasis on Climacteric."

* * *

A meeting of the Cowley County Society was held September 15 at Arkansas City. Dr. John R. Seger-son, of the Menninger Clinic, Topeka, was guest speaker and addressed the group on "Cerebral Accidents." A business session was held and the society voted approval of the Blue Cross and Blue Shield sales campaign in Cowley County.

* * *

Fifty-six physicians and members of the Auxiliary were present at a meeting of the Central Kansas Medical Society held at Hays September 15. The scientific program was presented at St. Anthony's Hospital, after which dinner was served at the Lamer Hotel. Dr. Haddon Peck, St. Francis, spoke on "The Reduction of Mortality Rate Accomplished by Organized Medicine in the Last Fifty Years," Dr. A. M. Cherner, Hays, discussed "X-ray Therapy," and Dr. John Moore, Hays, told of "Conditions of Hip Joints in Children." Another speaker on the program was Mr. Proctor Redd of Topeka, representing Blue Shield, who told of enrollment plans.

* * *

Members of the Shawnee County Dental Association were guests of the Shawnee County Medical Society at a meeting held at the society rooms September 6. The program consisted of a discussion of socialized medicine, preceded by a recorded talk on the situation in Great Britain today.

* * *

Dr. Henry H. Turner, clinical professor of medicine at the University of Oklahoma School of Medicine, was guest speaker at a meeting of the Sedgwick County Society at the Broadview Hotel October 11. His subject was "Clinical Syndrome of Androcorticalism."

Journal Page Reprinted

The Cancer Page appearing in the August issue of the Journal of the Kansas Medical Society, entitled "Cancer of the Paranasal Sinuses," was reprinted in full in the October issue of the Digest of Ophthalmology and Otolaryngology. The page is prepared for the Journal by the Committee on Control of Cancer.



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Surgery of Colon and Rectum, One Week, starting November 28, March 6.

Esophageal Surgery, One Week, starting April 17.

Breast & Thyroid Surgery, One Week, starting June 19.

Thoracic Surgery, One Week, starting June 12.

Fractures & Traumatic Surgery, Two Weeks, starting April 17.

GYNECOLOGY—Intensive Course, Two Weeks, starting February 20. Vaginal Approach to Pelvic Surgery, One Week, starting November 7, March 6.

OBSTETRICS—Intensive Course, Two Weeks, starting November 7, March 6.

PEDIATRICS—Intensive Course, Two Weeks, starting April 3.

MEDICINE—Intensive General Course, Two Weeks, starting April 3.

Gastroscopy, Two Weeks, starting March 6.

DERMATOLOGY—Formal Course, Two Weeks, starting May 1. Informal Clinical Course every two weeks.

ROENTGENOLOGY—Diagnostic & Lecture Course First Monday of every month.

Clinical Course Third Monday of every month.

X-ray Therapy every two weeks.

UROLOGY—Intensive Course, Two Weeks, starting April 17.

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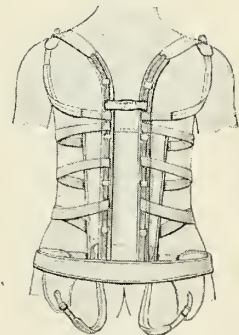
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BOOK REVIEWS

Clinical Biochemistry. Fourth Edition. By Abraham Cantarow, M.D., and Max Trumper, Ph. D. Published by W. B. Saunders Company, New York. 642 pages, 22 tables, 38 figures. Price \$8.00.

The new edition of *Clinical Biochemistry* contains a number of extensive revisions as well as the addition of several new topics. The authors have maintained their primary purpose of attempting to interpret specialized biochemical findings for the physician. The chapters and their discussions have been restricted to those phases of biochemistry which are concerned with problems commonly encountered in clinical medicine. In this respect, the text appears to be adequate and well formulated.

In the last chapter is presented a convenient and well organized outline of chemical abnormalities associated with various disorders.—K.K.T.

* * *

Fundamentals of Otolaryngology. By Lawrence R. Boies, M.D. Published by W. B. Saunders Company, Philadelphia. 432 pages, 184 illustrations. Price \$6.50.

This is an excellent textbook for both the medical student and the physician in general practice. It makes no attempt to be a reference book, but does give the fundamental information in a concise and readable manner. The book is divided into three parts, each part consisting of three sections as follows: 1. applied anatomy and physiology; 2. examination; and 3. description and treatment of diseases of this particular division of the ear, nose, and throat.

A final chapter on Prescription and Therapeutic Procedures does not measure up to the generally fine quality of the book and its illustrations.—W.B.B.

* * *

A Textbook of Neuropathology. By Ben W. Lichtenstein, M.D. Published by W. B. Saunders Company, Philadelphia. 474 pages, 279 illustrations. Price \$9.50.

This new textbook of neuropathology is excellently written. The 17 chapters of the book cover the entire field of neuropathology. The orientation of the author is broad and the pathological conditions are described around enough clinical information to appeal to the practitioner. The illustrations are well chosen and the photomicrographs are exceptionally well done. An extensive bibliography appended to each chapter affords the reader a wealth of source material for additional study of topics described in the text. It is well indexed.

The last three chapters of the book represent supplemental material that will have individual appeal to some readers. The most unique of these

for a textbook of neuropathology is a chapter entitled "Clinical Supplement." This briefly describes many clinical neurological diseases and syndromes that do not necessarily have typical histopathological features. Another chapter that will appeal to the student is a neuro-anatomical supplement directed toward orienting the reader in some data gleaned from the fields of embryology, anatomy and histology necessary to an understanding of neuropathology. The final chapter is a supplement on technical methods. The methods described have proved to be satisfactory to the author and have been used by him in studying materials described in the text. The watch-glass method for preserving gross specimens should be of interest to pathologists.

This book can be highly recommended to students, physicians, and pathologists alike.—A.T.S.

* * *

Shearer's Manual of Human Dissection. Edited by Charles E. Tobin, Ph.D. Published by the Blakiston Company, Philadelphia. 286 pages, 79 illustrations. Price \$4.50.

This manual of dissection is intended for use in the dissecting room, and serves to bridge the gap between the exhaustive works on anatomy and the short, sketchy dissection guides. It emphasizes the important features that the student must know, and largely disregards the insignificant minutia.

A practical procedure for the regional dissection of the human body is presented, with a brief, concise explanation of the salient anatomic features, augmented by a liberal number of drawings made in the dissection room. Standard descriptive texts should be consulted for more detailed information.

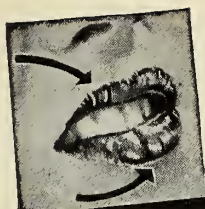
The student should find this manual valuable, and the post-graduate student will find it handy for review and quick reference.—D.M.G.

* * *

Psychosomatic Medicine. Second Edition. By Edward Weiss and O. Spurgeon English. Published by W. B. Saunders Company, Philadelphia. 803 pages. Price \$9.50.

The second edition of this standard text maintains the same high quality as was contained in the first edition. Some material has been added and other portions of the book have been re-written. In a field which must perforce be somewhat nebulous as compared to "pure" organic medicine, the authors have made their material surprisingly specific and to the point. Abundant case study material illustrates the various concepts quite satisfactorily.

The reviewer feels that every practicing physician, regardless of his field of interest, would do well to read and re-read this text. The authors have been pioneers in this field and their broad experience is clearly manifest in the readability and practicality of their second edition.—F.D.M.



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ABSTRACTS FROM CURRENT LITERATURE

Stokes-Adams Syndrome

Stokes-Adams Syndrome Associated with Complete Heart Block in Infancy and Childhood. By Samuel Nichamin, *Pediatrics*, 1-3, 327-330, March, 1949.

The Stokes-Adams syndrome is an uncommon clinical condition in infants and children.

A case is presented of a 19-month-old white male with a convulsion and a ventricular rate of 38 to 50 per minute. A respiratory infection preceded this attack and on other occasions excessive physical exertion appeared to be the precipitating factor. The electrocardiogram showed a complete A.-V. block. In addition there was a difference in EEG tracings between the right and left sides.

Atropine in doses as high as 0.8 mg. failed to produce any change in the pulse rate.

The condition must be differentiated from other syncopal or convulsive disorders and especially from idiopathic epilepsy. The persistent bradycardia, EKG and EEG studies readily provide the correct diagnosis.—D.R.D.

Laryngotracheobronchitis

Streptomycin in the Treatment of Hemophilus Influenza Laryngotracheobronchitis. By C. O. Terrell, Jr., and Carl S. Hoar, *Jnl. Ped.*, 34:2, 139-142, Feb., 1949.

The mortality in laryngotracheobronchitis due to the Hemophilus Influenza Type B has varied from seven to 40 per cent.

Since it is not possible to determine the infecting organism in many cases of this type in young infants by clinical methods or from the blood picture, the authors are treating all cases in real distress from tracheobronchitis on admission and continuing the drug until the throat culture is reported. Unless the culture reveals a streptomycin-susceptible organism the drug is discontinued. The review of the literature reveals no reports of serious ill effects from streptomycin given such a short period of time.

Laryngotracheobronchitis in infants is a very acute disease and those that succumb do so quickly because of the smallness of the infant's trachea and bronchial tree.—D.R.D.

* * *

91st Annual Session, Kansas Medical Society, Wichita, Kansas, May 15-18, 1950.



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Volume I

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Number 12

Survey of Anesthesia for Intra-Abdominal Operations*

John W. Pender, M.D.**

Rochester, Minnesota

The ways of producing anesthesia are as numerous and variable as the people responsible for its administration. The selection of the anesthetist is much more important than the selection of the agent or method to be employed. The well-trained anesthesiologist should be able to provide anesthesia for any operation with any or all of the anesthetic agents or methods, but the results may not always be completely satisfactory to all parties concerned unless the recommendations of the anesthesiologist are heeded.

The "tool kit" of the anesthesiologist contains many anesthetic agents. Actually, these agents and methods are the pharmacologic tools which enable the anesthesiologist to produce certain results. Just as all internists and surgeons do not employ the same drugs or instruments to produce a cure of any single disease or pathologic condition, all anesthesiologists do not employ the same anesthetic agents or methods for any single operation.

In order to judge the adaptability of the many available agents and methods to a group of operations such as operations within the abdominal cavity, which present similar problems, some ideals or measuring devices must be set up. The ideals to be obtained by any anesthetic for an operation within the abdomen will vary according to the demands of the three parties concerned in the operation, namely, the surgeon, the patient, and the anesthesiologist.

The surgeon desires good operating conditions. He must see the tissues on which he is operating, and, since the patient undergoing an abdominal operation must lie on his back, the surgeon must continually be operating at the bottom of a hole. This hole has collapsible sides, and any tone or force of contraction of the muscles of the abdominal wall is transmitted to the walls of this hole and tends to prevent exposure of the site of the operation. For

this reason, skeletal muscular relaxation is as necessary during intra-abdominal operations as for any type of surgical procedure.

The diaphragm which forms the upper end of the abdominal cavity must move with each inspiration and expiration, and it forces the abdominal surgeon to work in a moving field. Any type of anesthesia which promotes quiet breathing and decreased diaphragmatic excursions is helpful to the abdominal surgeon. Sometimes, when the surgeon asks to have the anesthesia deepened or asks the anesthetist to "get 'em down," what he may actually mean is that the respiratory motion seems excessive. Before increasing the depth of anesthesia the anesthesiologist must evaluate the condition and decide whether the increased diaphragmatic movement is due to light anesthesia or to some other cause such as obstruction of the respiratory passages or even too deep anesthesia.

As anesthesia reaches the third plane of the third stage, the intercostal muscles become less active and the diaphragm must make wider excursions in order to maintain the minute volume of respiration. This increased diaphragmatic movement, which is a sign of deep anesthesia, may easily be interpreted as a sign of light anesthesia. Obviously the indicated treatment in the two states is entirely different and the welfare of the patient may depend on the anesthesiologist's own evaluation of the surgeon's suggestions.

Having delegated the responsibility of the operation to the surgeon and the responsibility of the anesthesia to the anesthesiologist, the patient is primarily interested in avoiding as much as possible of the discomfort associated with the operation and anesthesia. He wants to be unconscious through as much of the procedure as possible and have as little memory of the trip to the operating room and the induction of anesthesia as is feasible. Any aid which diminishes the postoperative distress and the nausea which follows the operation, anesthesia and analgesic medication, is appreciated.

*Read at the joint meeting of the Kansas Society of Anesthesiologists and the Lyon County Medical Society, Emporia, Kansas, March 1, 1949.

**Section on Anesthesiology, Mayo Clinic.

The anesthesiologist is primarily interested in the safety of the patient who has been entrusted to his care. This does not imply that the surgeon and patient are not also interested in safety, but they see the illness as a whole while the anesthesiologist concentrates his attentions on the patient in the operating room. He realizes that the most serious and immediate threat to his patient's safety is a lack of adequate oxygen to the tissues, and much of his thinking and planning is based on the prevention of even the possibility of anoxia. Such conditions as obstruction of the airway, too deep or too high a level of anesthesia, open pneumothorax, extreme degrees of posture, use of weak anesthetic agents alone, marked anemia, and secondary shock are avoided with diligence, and provision is made for their immediate treatment if their prevention is not possible. The anesthesiologist also is constantly aware that many of his "tools" are inflammable and explosive and, therefore, constitute a constant threat to the safety of his patient.

Premedication

The anesthetist considers the anesthesia as beginning with the administration of a premedicant. Agents such as the opiates, merperidine hydrochloride (demerol), methadon or dolophine hydrochloride, atropine, scopolamine, and barbiturates are commonly administered by the oral, rectal, subcutaneous, intramuscular and intravenous routes. Morphine is the opiate most frequently used, but it produces disturbing side effects in many cases. Since pantopon is a mixture of the total alkaloids of opium, it contains morphine and, therefore, is not a satisfactory substitute for patients who are sensitive to morphine. Dilaudid hydrochloride has a formula which is similar to, but slightly different from, morphine. It is thought by some investigators to have fewer side effects, especially on the gastrointestinal tract, than morphine.

The group of newer analgesics, of which merperidine hydrochloride and methadon hydrochloride are examples, seems to have definite indications but has not been generally satisfactory for preanesthetic medication because in the doses usually employed they do not produce as much euphoria and sedation as do the opiates.

Before general anesthesia is induced, a belladonna derivative should be given to reduce secretions in the upper part of the respiratory tract and to reduce the incidence and severity of nerve reflexes passing over the parasympathetic nerves. Atropine and scopolamine each have their advocates, but the advantages and disadvantages seem to be about equal. Scopolamine produces more amnesia but occasionally makes the patient less co-operative.

The intravenous route of administering premedi-

cants is not employed as frequently as is indicated when the drug must be given a short time before the induction of anesthesia. It is desirable for the premedicants to exert their maximal effect before the induction of general anesthesia; therefore, when these drugs are administered subcutaneously they should be given about an hour before the induction of anesthesia is started.

Rectal Anesthesia

Rectal administration of tribromoethanol (avertin), barbiturates and ether in oil may be useful for producing a basal anesthetic state when other anesthetic agents are to be used as supplements. This form of anesthesia is contraindicated for operations on the large bowel. When used alone, these drugs do not produce enough muscular relaxation to please the surgeon, and the anesthetist is not able to control the level of anesthesia adequately. The patient rather likes this type of anesthesia because it can be induced in his room without causing any more discomfort than the administration of an ordinary enema, and all the psychic disturbances associated with the anesthesia and operation are avoided.

Local Anesthesia

Among the anesthetic agents that may be used to produce infiltration, regional, subarachnoid (spinal), or peridural anesthesia for abdominal operations are procaine hydrochloride, metycaine hydrochloride, pontocaine hydrochloride (tetracaine hydrochloride), nupercaine hydrochloride, intracaine (beta-diethylaminoethyl-*p*-ethoxy benzoate hydrochloride), monocaine hydrochloride (butethamine hydrochloride), zylcaine, (W-diethylamino-2,6-dimethyl-acetanilide.)

Infiltration and regional anesthesia have not been used as extensively in this country as they have been in Europe for operations on the abdomen. This is probably due to the fact that satisfactory general anesthesia is more frequently available in the United States. For abdominal operations, local anesthesia most frequently is used in cases in which the physical condition of the patient is so poor that it is not advisable to administer a general anesthetic agent to produce anesthesia of sufficient depth to cause muscular relaxation.

Infiltration of the line of incision, field block or block of the sixth to the eleventh thoracic nerves inclusive under the lower border of the corresponding rib on one or both sides in the posterior axillary line or at the intervertebral foramina, will produce anesthesia of the abdominal wall if the block is performed accurately and thoroughly. Anesthesia of the visceral peritoneum may be obtained by a block of the splanchnic nerves by either the surgeon or anesthesiologist. When the posterior approach is used, the anesthesiologist may perform the splanchnic

nic block before the operation is begun, or the surgeon may use the anterior approach after the abdomen has been opened.

The surgeon frequently does not like local anesthesia because it takes time to block the nerves, the muscular relaxation is not always satisfactory, and the patient may move and strain. The patient does not prefer local anesthesia because he is awake and knows what is taking place, the block usually does not abolish all sensation, and he is afraid that the operation will extend into an unanesthetized area or that the anesthesia will not last for the duration of the operation. Local anesthesia of all types is helpful to the anesthesiologist because the patient can maintain his own airway and be responsible for his own respiration.

Spinal anesthesia is an incorrect term and should not be used to designate the type of regional anesthesia produced when the roots of the lower spinal nerves are blocked as they pass through the subarachnoid space. Since no attempt is made to anesthetize the spinal cord or the spinal column, "subarachnoid block" would be a more correct and more psychologically acceptable term. The word "spinal" creates fear because the patient has visions of large needles repeatedly being thrust into his spinal cord. Many patients refuse to have spinal anesthesia because of the rumors they have heard about persistent backache and neurological sequelae following this type of anesthesia. Most patients want to be unconscious so they cannot see, hear, feel, or smell anything during the operation. If the patient is in doubt about having so-called spinal anesthesia, it is the surgeon who must convince him, since the anesthesiologist usually has not been closely acquainted with the patient.

Some surgeons prefer subarachnoid block for most operations on the lower part of the abdomen, because the anesthetic agent is not explosive and this method produces good muscular relaxation and quiet respiration. The vomiting which sometimes occurs in the course of subarachnoid anesthesia is a disadvantage to the surgeon but can usually be controlled by very light general anesthesia. In the past, the operating time was limited when only the single-dose technic of subarachnoid block was used, but now that the intermittent or continuous technic can be used with the malleable needle, ureteral catheter, or plastic catheter, the operating time is not limited by the anesthesia.

The occasional failure of the anesthetic agent to become effective, which causes a delay not appreciated by the surgeon, is most often caused by the full dose of the anesthetic solution not being deposited in the subarachnoid space. Now that many patients are allowed to get out of bed in a short time

after operation, more postarachnoid puncture headaches are being recognized. They may interfere with the usual postoperative routine and the patient's departure from the hospital may be delayed. To the anesthesiologist, the danger of the level of anesthesia becoming too high, the fall in blood pressure and the neurologic complications are the main objections to subarachnoid block.

Peridural anesthesia, which includes caudal anesthesia, has not been used generally for intra-abdominal operations. The resulting anesthesia is uncertain in intensity and extent, and, if operating conditions are produced comparable to those resulting from subarachnoid block, the complications are about the same except that no postpuncture headache occurs. There is always the grave danger that the large dose of anesthetic solution may be introduced into the subarachnoid space instead of into the peridural space.

The use of refrigeration anesthesia, which may be classed with regional or local anesthesia, is limited to the extremities. This type of anesthesia has not been found useful for abdominal operation.

Intravenous Anesthesia

Pentothal sodium is the anesthetic agent most frequently administered by the intravenous route but evipal soluble (hexobarbital soluble), ethyl alcohol, procaine hydrochloride and ethyl ether have been introduced directly into the peripheral blood vessels for the purpose of producing anesthesia. While curare is not an anesthetic agent, one of its most frequent uses is as an adjunct to anesthetic agents. All these agents may be administered by the single-dose, intermittent or continuous methods.

While the use of pentothal sodium alone has been reported as successful in large series of abdominal operations by a few anesthesiologists, most surgeons and anesthesiologists do not feel that pentothal sodium, alone or combined with nitrous oxide, produces adequate muscular relaxation for abdominal operations when the dose is kept in the range considered to be safe. The combination of pentothal sodium for light anesthesia plus curare for muscular relaxation has proved satisfactory. The quiet respiration and excellent muscular relaxation are an aid to the abdominal surgeon. The patient is pleased with the rapid pleasant induction, with the low incidence of postoperative nausea, and with the period of sedation and amnesia which persists after the anesthesia. This combination produces the minimal adverse effects on circulation, only slight disturbance of the patient's metabolism, and is noninflammable in character; therefore, it is liked by the anesthesiologist.

The disadvantages to the anesthesiologist are as follows: (1) depression of respiration may occur

when large doses of curare are necessary to produce the desired muscular relaxation, (2) the laryngeal reflexes are not proportionately abolished; therefore, laryngeal spasm may occur and the insertion of an endotracheal tube is difficult, and (3) prolonged postoperative depression occurs when large doses of pentothal sodium are necessary.

Inhalation Anesthesia

Inhalation anesthesia is the type of anesthesia that is used most frequently for intra-abdominal operations in this country. Nitrous oxide, ethylene, cyclopropane, ethyl ether, chloroform, divinyl ether, ethyl chloride, and trichloroethylene are the principal anesthetic agents that are administered by inhalation. They may be administered by the open, semiclosed or closed method, by the endotracheal or endobronchial route, or by insufflation.

When used alone, nitrous oxide or ethylene is too weak to produce satisfactory anesthesia for abdominal operation but either agent may be used to advantage when combined with other more potent anesthetic agents.

Cyclopropane when used alone produces moderate muscular relaxation and quiet respiration. Light anesthesia produced with cyclopropane plus curare is very satisfactory, but a few surgeons believe that cyclopropane promotes increased bleeding at the site of operation. This may possibly be due to a slight elevation in blood pressure which occurs in some cases during cyclopropane anesthesia. Patients like the quick and not unpleasant induction with this agent.

The anesthesiologist likes cyclopropane for the following reasons: (1) a high percentage oxygen may be administered during anesthesia, (2) the patient recovers rapidly from the anesthesia and can maintain his own airway soon after the administration of the gas is discontinued, and (3) few metabolic disturbances are caused by this agent.

Among the disadvantages of cyclopropane to the anesthesiologist is the depression of respiration which frequently occurs in the stages of anesthesia necessary for the production of relaxation of the abdominal muscles. Smaller than average doses of morphine or other opiates should be given for premedication if the anesthesia is to be produced with cyclopropane; otherwise, an excessive depression of respiration may result from the combined effect of the two depressing agents. In some cases, cyclopropane causes disturbances in cardiac rhythm and rate, and may produce ventricular fibrillation. The use of many drugs has been advocated to decrease this effect of cyclopropane on the heart, but, in my experience, the addition of small amounts of ethyl ether to the gas mixture being inhaled has been most satisfactory for this purpose.

When curare is given to produce the necessary muscular relaxation and only a low percentage of cyclopropane is needed to produce very light anesthesia, the occurrence of cardiac complications has been less frequent and less severe. Owing to the rapidity with which changes in depth of anesthesia may occur in cases in which cyclopropane is being administered, the anesthetist should devote his full attention to the administration of the anesthetic agent and should not participate in other duties in the operating room.

Occasionally, in cases in which cyclopropane anesthesia has been used, serious delirium may develop in the period of recovery, or the patient may exhibit a shock-like state characterized by low blood pressure. It has been claimed that this shock-like state is not dangerous and that the patient will recover in a short time without treatment; the difficulty, however, lies in making the diagnosis as to whether the low blood pressure and shock are the result of the cyclopropane and do not require treatment or whether the low blood pressure is the result of traumatic shock and requires immediate treatment. All precautions against fire and explosion must be strenuously observed during the administration of cyclopropane.

Diethyl ether is still probably the most frequently employed anesthetic agent for intra-abdominal operations. It produces satisfactory muscular relaxation, and its effects are accurately predictable. It tends, however, to increase the rate and extent of the respiratory excursions, and it is inflammable. The patient prefers not to take ether because of the unpleasant induction when this agent is used alone, and because of the nausea and sensation of general malaise which rather frequently are experienced during the immediate postanesthesia and postoperative period.

The anesthesiologist may be partial to the comparatively clearly defined signs and stages of ether anesthesia and the stability of the resulting depth of anesthesia. The fact that both respiration and circulation tend to be stimulated by ether minimizes the anesthesiologist's task of guarding the safety of the patient. One of the disadvantages of ether anesthesia, that is, slow recovery, has been decreased to a large extent in many hospitals by the institution of special postanesthesia rooms, so that one nurse may more safely and adequately supervise the immediate postoperative care of several patients.

The increase in the secretion of mucus in the passages of the upper part of the respiratory tract caused by the inhalation of ether is a worry to the anesthesiologist because the mucus interferes with the patency of the patient's airway and, when as-

pirated into the lower part of the respiratory tract, may interfere with the gaseous exchange through the alveolar membrane. Alterations in the acid-base balance, carbohydrate metabolism and liver and kidney function are added disadvantages of ether anesthesia. Until recently, the anesthesiologist had no accurate method of determining the strength of the ether vapor being inhaled by the patient and was forced to rely mainly on the reaction of the patient to determine whether the amount should be increased or decreased. Faulconer's acoustic gas analyzer¹ gives promise of eliminating this disadvantage of ether and other anesthetic gases and vapors.

, Divinyl ether and ethyl chloride are too toxic to be administered for the duration of time usually required for intra-abdominal operations and, in addition, are inflammable.

Trichlorethylene is a noninflammable general anesthetic agent which has been used more extensively in England than in this country. It vaporizes slowly, and the muscular relaxation produced is not as profound as is desired by most surgeons for intra-abdominal operations. Damage to the liver and trigeminal nerves has been reported following its use.

The endotracheal method of general anesthesia is advantageous, especially for the surgeon and the anesthesiologist. Since the patient is unconscious during its use, he rarely knows or cares whether an endotracheal tube was used or not during the administration of the anesthesia. About the only time at which he is aware of its use is the infrequent instance in which the use of the endotracheal tube is followed by a slight hoarseness or irritation of the throat for 24 to 48 hours after the operation.

From the standpoint of the surgeon, endotracheal anesthesia is advantageous because it promotes quiet breathing on the part of the patient and satisfactory relaxation of the abdominal muscles that participate in respiration.

The use of endotracheal anesthesia allows the anesthetist to get out of the field of operation. From the standpoint of the anesthesiologist, the use of an endotracheal tube insures a good airway and an

added insurance of the maintenance of the safety of his patient. A plain endotracheal tube of large caliber so fills the space between the vocal cords that aspiration of foreign material into the trachea and lungs is decreased, while a tube with an inflatable cuff practically makes such aspiration impossible. This is particularly important during operations in the upper part of the abdomen in which manipulation of the stomach frequently causes its contents to be expressed up the esophagus and into the pharynx, where they may be aspirated into the lungs while the laryngeal reflexes are abolished by the general anesthesia. With an endotracheal tube in place, positive pressure anesthesia or controlled respiration may be instituted immediately at any time in case of emergency, such as respiratory arrest, or the production of open pneumothorax. Besides the occasional pharyngeal and laryngeal complications already mentioned, damage to the teeth may occur in the course of insertion of an endotracheal tube, especially in cases in which the patients have a short, thick neck and nonremovable, upper incisor dentures.

Summary

Many different agents and methods are available to the anesthesiologist and surgeon for producing anesthesia for intra-abdominal operations. No single agent or method is ideal or satisfactory for all conditions, but a combination of agents and methods is more likely to be satisfactory to all parties concerned. For example, anesthesia may be started with intravenous administration of pentothal sodium or by the administration of a quickly acting gas, such as cyclopropane, for the comfort of the patient. Curare or ethyl ether may be used for maintenance of the anesthesia to provide satisfactory operating conditions for the surgeon, and an endotracheal tube may be inserted to allow the anesthesiologist to be prepared to prevent or treat likely complications and maintain the safety of the patient.

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COMMITTEE CHAIRMEN FOR 1950 MEETING

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A New Concept of Treatment

DeMerle E. Eckart, M.D.

Abilene, Kansas

The purpose of this paper is to enable the doctor to consider the unit as a biological unit without the usual separation of the psychobiological unit. The psychosomatic concepts have brought us closer to this goal but have failed to include the psyche as an integral part of the unit. The change over the last century has necessitated the biological unit to depend upon its primary security from the nervous system or nerve cell group instead of the musculo-skeletal group. Thus, since the nerve cell group takes a physical load from a previously considered physical or organic group of cells, it must be considered on the same basis as that group.

I believe in any discussion of a concept all terms should be defined as accurately as possible. Nerve cell energy is defined as energy required in projection of the unit in the biological field and the motivation and coordination of the metabolic process required in that projection. This means that this concept considers all relationship intrapersonal or the personal relationship with society; the thinking, conflicts and decisions attached to that relationship, whether they are in the scope of present or past unsolved or dissatisfied relationships must be considered to use physical energy.

I shall try to illustrate this point with a 29-year-old war veteran who has had multiple burns over his body and the loss of one eye while in service. He has a history of multiple hospitalizations with final diagnosis of psychoneurosis anxiety neurosis. This patient was first seen by me May 3, 1947. He was taking veterans training learning dairy business. This dairy did not have adequate facilities to give complete training and was using the patient as a cheap way to get a manager. Within a few weeks he was in charge and held responsible for all operations. Thus, being a conscientious plus insecure individual with past traumatic and nerve cell overloads, he was first seen complaining of flu and being tired all the time. General physical examination was negative. I began seeing this patient more frequently using psychotherapy and sedation with temporary results.

On January 6, 1948, his complaints became more acute. Another physical examination revealed sinusitis and a small ulcer in sigmoid, plus a mild anemia. These were treated with success but his complaints were not helped and he began to lose more days from sickness with colds and stomach difficulties. We had discussed nerve cell loads and the possibility of getting a job with only muscular requirements.

Psychotherapy was becoming less and less effective. We were fortunate five months later to have a pipe line started through this area, and a job walking the line opened up to this patient. He had adequate economic return to enable him to take care of his financial responsibilities. He was away from his family except for week ends and had only simple intrapersonal social responsibilities. The response was almost immediate. He has had only one sick day in the last year, due to a cold. Thus, by changing the energy requirement from a previously overloaded cell group to one with adequate reserve, we have succeeded in enabling the biological unit to make an adjustment and live within his energy quotient.

It is obvious further definitions are necessary. We shall start out with the cell as a basic unit; the energy quotient as the energy output per unit of time; the cell reserve to denote the ability of the cell to produce energy quotient. Energy quotient decreases in proportion to cell reserve. Overloads are defined as cell requirements greater than the energy quotient. In other words, they utilize cell reserve. Cell debt is used to denote cells that have no energy quotient. Structural changes are of two types—reversible and irreversible.

Cell groups are divided into systems which follow the usual divisions as found in all anatomical studies dealing with the biological unit. The nervous cell group in this discussion is used in the same grouping as other systems. In other words, instead of saying psychobiological unit it is necessary to use psychocardio, respiratory, digestive, etc. biological unit. This does away with the awkwardness of having to evaluate the amount of physical and mental disability in each patient. It enables us to discard the terms of nervousness and such in general treatment.

The nerve cell overloads require physical energy as well as muscular cell overloads. Both cell groups, when reserve is decreased, may bring about pain in the musculo-skeletal group. It is believed that the cells in the nerve fiber or synapses protect the end organ from over stimulation. When the cell's reserve is low, this protection ceases to exist for strong stimuli, thus causing a traumatic overload to the end organ. In the same way low reserve in the brain cells would give inadequate stimulus to the end organ to enable it to carry the required physiological and chemical loads. It is not the purpose of this paper to consider the nerve cell overloads as the pri-

mary cause of disease, but to bring out the physical relation between overloads in the nerve cell group to other overloads. This becomes of utmost importance in explanation to a patient that his symptoms are a result of using physical energy. This is advantageous in treatment in two ways—by removing the stigmata which usually follows terms such as nervousness or just “your nerves;” and it enables one to convince the patient the necessity of living plans to conserve energy quotient by comparison to changes in return from business or principal when reserve decreases.

The primary overloads to the biological units may be outlined as follows:

- I. Infection
- II. Traumatic to include surgery
- III. Chemical
- IV. Glandular
- V. Tumor
- VI. Security
 - A. Nerve cell
 - B. Muscular skeletal
 - C. Smooth muscle
 1. Cardio-Respiratory
 2. Gastro-Intestinal
 3. Genito-Urinary, etc.
 - D. Food
 - E. Genetic, for example, the rheumatic state.

These overloads can result from present or past structure of the biological field as well as the unit. Complaints are the first indication of overloads, symptoms are late indications. This might be compared with acute infection overloads in childhood, such as pneumonia which either clears up or continues as a chronic infection load as a chronic bronchitis. The acute nerve cell loads may come on in the same way and may clear up or continue as chronic loads. Each of the chronic loads decreases the total energy quotient per day of the patient.

Overloads may also be expressed as per cent of cell reserve used per day. For example 1/360 per cent per day or one per cent per year. It is estimated that 20 to 30 per cent of cell reserve must be utilized before the energy quotient decreases below the minimum energy requirements of the biological unit (complaints become continuous). The overloads, past or present, may be in one group of cells while the complaints or structural changes are in another. This is especially true of the nerve cell group or circulatory cell group.

In treatment one can evaluate the approximate cell reserve by determining the amount of energy requirement to bring about complaints. If complaints are continuous with the usual daily loads then we must assume that it is greater than 20 per cent. Generally we can assume it is about 30 or 40

per cent, especially if symptoms are present. This means the energy quotient is 60 to 70 per cent of normal. Time requirements restoring reserve seem to be in direct proportion to time required to deplete the reserve plus the amount of cooperation in decreased daily requirements. This means that if we are going to be successful in treatment of a patient with 60 to 70 per cent of energy quotient we must decrease yearly energy requirements sufficient to replace reserve.

Office periods must be used for patient education. Treatment plans naturally include living plans and all other procedures at our disposal to remove overloads. It is also important that we do not recommend new overloads to the patient such as surgical, new intrapersonal, emotional, social or economic responsibilities, unless of course those are absolutely essential to the patient's immediate health, and in that case the patient should be told that complaints will be accentuated until the reserve is replenished.

When structural changes in a cell group are irreversible the loads to the group will always have to be limited. As one progresses in building reserve it is important that we assist the patient in developing a living plan which will keep energy requirements equal to his energy quotient.

A 46-year-old male accountant with a history of hypertension, spastic colon and chronic intestinal symptoms since 1930 and of being under continuous doctors' care with multiple medications daily for the last six years, was first seen by me September 16, 1946. He complained of having a diarrhea the last four days. His blood pressure would vary from 200/110 to 178/100. His blood pressure would go down to 150 to 160 over 90 to 100. Repeated examination revealed a common type of intraventricular block and evidence of chronic cholecystitis. In other words, he had evidence of irreversible destruction and lowered energy quotient in the cardiovascular cell group, and lowered energy quotient as a result of chronic infection overload in the gastrointestinal cell group.

Evidence brought out in the later history revealed chronic nerve cell overloads plus a habit to take on other people's loads. He has always been required to take more than usual family and security responsibility. We worked out a program of cutting down 50 per cent energy requirements due to security loads. This was done by cutting out all muscular loads other than necessary muscular motivation in his work. By putting all detailed work and intrapersonal relationship on his office staff, he cut down the other intrapersonal load plus entertainment load to a minimum. He was put on a low salt, low fat, low residual diet. Each office visit was used as continuous physical check plus reeducating the patient

on necessity and reasons for cutting down energy requirement. He was given a barbiturate to take when upset.

We were fortunate in that he was economically able to take up flying and wanted to very much. This helped in that it gave ego support, thus alleviating some security loads. The first eight months were filled with discouragement and difficulties with readjusting energy requirements. Then definite improvement in complaints began to be present. His sick days have gradually been cut down until this last year he has had only one regular check and no sick days. His symptoms were free although there were no definite changes in structure but in physiological loads to those organs with low energy quotient. This patient has worked out a living plan, after understanding his condition, of living within his energy quotient.

A 47-year-old housewife was first seen by me January 5, 1948, with multiple continuous complaints referable to abdomen, head, extremities, heart. These complaints dated back 15 years with continuous doctoring. The complaints became more continuous the last five years. Also there developed a urinary frequency with slight but aggravating incontinence.

A traumatic overload in the form of surgery was recommended to this patient. The patient submitted and the result was an exacerbation of the complaints. A complete history and examination revealed glandular overload referable to thyroid; infection loads referable to chronic rhinitis and cholecystitis and colitis; structural damage irreversible in the form of moderate cystocele and retrocele; chronic and acute security overloads in the form of muscular overloads at home as a result of poor arrangement of the kitchen and poor facilities, with added load of a three-year-old child; a nerve cell overload chronic in the form of too great responsibilities during adolescence.

There was an acute nerve cell load in that patient, as she was imposed upon to do multiple community duties. Her friends could not understand why she was sick because she looked so well. Food overload was present resulting in 25 pounds overweight. A treatment plan was worked out. Her kitchen facilities were improved to cut down muscular loads. All extra family energy requirements were discontinued. All intrapersonal contact was cut to a minimum.

Low fat and low cholesterol diet plus bile salt was used to decrease the gastro-intestinal load and biliary requirements. Goitrogenic drug was used to relieve glandular loads. The nerve cell requirements were both chronic and acute in nature, and she was using a tremendous amount of physical energy per day.

Time was used for educating the patient to the use of all nerve cell energy and to instill in the patient the idea that nerve cell energy requires physical energy. We explained that unless we made a permanent plan of cutting down energy requirements, recovery would be only temporary and the first sign of discomfort would be an indication that her energy output was too great. By our seeing the patient 12 times over a period of seven months, each time taking an average of 30 minutes, this patient has been free of complaints for the last year. All medication has been discontinued except non residue diet—one physical check-up January 26, 1949. This patient has cut down her total energy requirements below her total energy quotient per day.

A 61-year-old farmer was first seen by me August 28, 1946. This patient was complaining of exhaustion, dizziness and constipation. Physical examination was negative. He was on supportive treatment. On September 27, 1947, he had been to an eye specialist because of blindness in one eye. The eye specialist recommended a complete physical.

Examination suggested a mass in abdomen and exploration was recommended. However, the patient refused. Further history revealed security overloads had been present relative to nerve cell energy requirements since childhood, and there had been much underlying conflict between him and his older brother and later his own son. This was brought out six months later when patient developed neurodermatitis (as described by Becker.)¹ Each time the patient seemed about to recover he would have an acute exacerbation of the dermatitis following a visit by one of the two men. I also believe the extra load suggested by myself by a wrong diagnosis of cancer of the colon was an added load which contributed to his eventual death. His death occurred in November, 1948. The primary cause was chronic and acute security overloads the resulting structural damage of extensive skin damage. Clinical and laboratory findings by the dermatologist were not out of line with this conclusion and the autopsy was negative.

In conclusion, this concept is no panacea for treatment. The road to recovery is full of hard work, disappointments and discouragement on the part of both the doctor and the patient. It can only be compared with the removal of acute infection overload of pneumonia before our present antibiotics.

The security loads have been accentuated since 1914 and primarily energy requirements have been put on the nerve cell group. The patient as well as the doctor must be convinced that the energy requirement from the nerve cell group is the same type of energy that is used by other systems and can cause structural changes within itself (which with our

present methods we have been unable to identify except by electroencephalography)² and in other systems in which it plays a most important part in physiology and chemistry.

It is of utmost importance that the doctor make no conclusion before all findings are before him. It requires continued rechecking of the patient. Nerve

cell overloads do not render the patient immune from structural changes elsewhere but can accentuate them.

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Gastroduodenal Ulcer Following Gastroduodenostomy for Duodenal Ulcer†

V. Dale Alquist, M.D.*

Philip Cooper, M.D.**

Wichita, Kansas

This paper is presented as a review of the more recent literature on gastroduodenostomy for duodenal ulcer with a case report.

The present paper does not include discussion of pyloroplasty.

Gastroduodenostomy was developed along with numerous other operations for peptic ulcer and its complications. Following the suggestion by Jaboulay in 1892 for anastomosing the second part of the duodenum to the stomach, and performed by him in 1894,¹ various procedures and modifications of this operation have been performed and reported by other surgeons. Among later reports, Reinhoff² in 1932 reported an infrapapillary gastroduodenostomy performed by mobilizing and using the third and fourth part of the duodenum with the idea of lowering the high incidence of recurrent ulcers that occurred following gastrojejunostomy. He reported 13 cases with apparently excellent results.

Clute and Sprague³ in 1938 reported excellent results in 15 cases by anastomosing the mobilized second, and at times, the third portion of the duodenum to the stomach, which they stated differed only in minor detail from the operation of Villard as modified by Kocher, and procedures described by Balfour in 1918 and by Moynihan in 1921. Flint⁴ in 1927, in a study of 200 similar operations, did not see the complication of stomal ulcer. Wilkie⁵ in 1933 reported two cases of stomal ulcers in 159 gastroduodenostomies. Graham⁶ in 1938 reported one stomal ulcer following nine gastroduodenostomies. This made a total incidence of less than one per cent stomal ulcers following gastroduodenostomy

in these series compared with an incidence of approximately 8.5 per cent stomal ulcers following posterior gastro-enterostomy reported in a collective review by Wright⁷ in 1935.

Clute and Sprague³ stated that they did not think sufficient advantage came from the third part of the duodenum as described by Reinhoff² to warrant the added dissection necessary to mobilize it. Hunt⁸ in 1939 reported 22 lateral gastroduodenostomies with excellent results, although he⁹ in a later article reported one stomal ulcer from the above series. Clute and Sprague¹⁰ in 1942 reported 11 additional gastroduodenostomies with apparently excellent results.

The collective rationale, based on clinical and animal experimentation, for doing gastroduodenostomies was that the duodenum was physically better suited than the jejunum to receive the gastric contents. Hunt⁸ stated that the greatest degree of alkalinity of the duodenum is in the region of the papilla. In experiments on dogs by Wilhelms, Henrich and Hill,¹¹ it was shown that the increase in duodenal regurgitation was greater after gastroduodenostomy than after gastrojejunostomy or pyloroplasty. Also Hill, Henrich and Wilhelms,¹² found that the reduction in gastric acid curve was more striking after gastroduodenostomy than after gastrojejunostomy or pyloroplasty. In a series of experiments with gastrointestinal anastomosis on animals by DeBakey,¹³ ulceration occurred in a steadily rising percentage of cases when increasing quantities of bile, pancreatic juice and succus entericus were removed from the area of the suture line and that ulcer occurred in 100 per cent of the cases where no bile, pancreatic juice or succus entericus reached the suture line.

Reinhoff,² Clute and Sprague,¹⁰ and Hunt⁸ do not state that gastroduodenostomy is the treatment of choice for duodenal ulcer but that it is a proce-

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*Resident in Surgery, Veterans Administration Hospital, Wichita, Kansas.

**Chief of Surgery, Veterans Administration Hospital, Wichita, Kansas.

dures with which every gastrointestinal surgeon should be familiar.

Graham⁶ in 1938, discussing the technical surgical procedures for gastric and duodenal ulcer, stated that because of the complications following gastroduodenostomies, he was doing the more radical procedure of gastric resection, with or without the removal of pyloric antrum and also quoted Sir David Wilkie, who at that time had done 180 gastroduodenostomies but because of the high incidence of late postoperative sequelae had begun to question the value of the operation.

Aside from the report by Clute and Sprague¹⁰ in 1942, references in the literature pertaining to gastroduodenostomy since 1940 are very meager. Lahey,¹⁴ discussing gastroduodenostomy in 1941, in an article on the surgical procedures employed in the treatment of peptic ulcer, wrote that "it has little or no advantage over gastroenterostomy or pyloroplasty and has the very definite disadvantage that, should postoperative ulceration occur in the stoma, it is so far down in the duodenum that, when the ulcer is removed by subtotal gastrectomy which now must of necessity be done, preservation of the common duct and the point where it enters the duodenum is very difficult. So much of the duodenum has been used up by the anastomosis of the cut end of the stomach to the duodenum that an extremely short duodenal stump remains, often so short as to be inadequate for safe inversion and closure in the course of the duodenectomy for removal of the ulcer at subtotal gastrectomy."

The following case history is presented as an example of stomal ulcer following an anastomosis of the stomach to the third part of the duodenum, and the difficult technical procedures involved in the subsequent operation because of the close proximity of the pancreas, superior mesenteric vessels and mid-colic artery.

Report of Case

A 56-year-old white male was admitted to the hospital on July 5, 1948, because of abdominal pain and vomiting. Patient was first hospitalized for epigastric distress in 1918 at the Norfolk Naval Hospital. Since that time patient had had an almost continuous abdominal complaint of epigastric distress which varied in degree. Diagnosis of duodenal ulcer was confirmed clinically and by x-ray in 1935. In 1942, because of clinical and x-ray diagnosis of pyloric stenosis, a gastroduodenostomy was done at another hospital. Postoperative course was complicated by incisional hernia and wound abscess which drained intermittently until 1944, when a surgical sponge was found and removed on abdominal exploration. The incisional hernia remained. Epigastric

distress continued following operation although it was more vague in nature.

Three months prior to admission, patient's symptoms became more definite and severe. He developed frequent attacks of vomiting and epigastric pain which had its onset approximately two hours after meals and was relieved for a few minutes by milk and soda or by food. There was a history of several tarry stools. Present admission was precipitated by an acute exacerbation of abdominal pain and vomiting beginning the day of admission. Examination on admission revealed moderate epigastric tenderness. There was a large incisional hernia in the upper abdomen measuring $9\frac{1}{2} \times 1\frac{1}{2}$ inches.

X-ray examination showed a stomal ulcer in addition to the deformity of the duodenal cap, and pyloric stenosis. Chest films were interpreted as showing chronic bronchitis and possible early aortitis. The EKG tracing showed low voltage and minor T¹ and T⁵ flattening which was interpreted as being compatible with some slight A.S. change. Gastric analysis showed fasting total acidity, 65 and free HCl, 41. Kidney function tests showed a urine concentration up to 1.026 and a P.S.P. excretion of 25 per cent in two hours. The r.b.c. was 5.8 M., Hb. 13.2 grams, w.b.c. 13,700 with 65 per cent neutrophils and 32 per cent lymphocytes. The serology, urea N., cholesterol, total proteins and alb./glob. ratio were within normal limits.

Patient was taken to surgery for exploration on July 22, 1948, with the tentative plan of performing a subtotal gastric resection or vagotomy, dependent upon the operative findings. At operation, under nitrous oxide, oxygen, ether endotracheal anesthesia, it was found that there were very dense adhesions between the stomach, duodenum, omentum, transverse colon and anterior abdominal wall. The stomach and duodenum were exposed with considerable difficulty. The duodenal bulb was scarred and puckered. The stomach had been anastomosed to the third part of the duodenum and there was considerable thickening and induration in the anastomotic area.

The duodenum was dissected free from the stomach with considerable difficulty because of the close proximity of the pancreas, superior mesenteric vessels and mid-colic artery. A large indurated stomal ulcer was found with a crater approximately 2.5 cm. in diameter. The ulcer on the duodenal side was excised and the opening in the duodenum closed with two layers of sutures.

At this time the anesthesiologist stated that he had some difficulty maintaining a satisfactory blood pressure level, and it was felt that under the circumstances the stomach resection should and could be accomplished as a second procedure at a later date. The opening in the stomach was closed rapidly with

two layers of sutures and the abdominal wound was closed with through-and-through silk sutures.

The postoperative course was uneventful, except for some persistent daily gastric retention of 100 to 500 cc. Patient's abdomen was re-explored under nitrous oxide, oxygen, ether endotracheal anesthesia on September 2, 1948, and adhesions were again pronounced requiring careful dissection. However, after approximately one hour of operating time, before the stomach could be satisfactorily mobilized for a resection or gastro-enterostomy, patient again showed a precipitous drop of blood pressure in spite of blood transfusions and other supportive therapy and the operation had to be terminated. Following this operation, the patient's general condition remained satisfactory, but the gastric residual each night varied from 500-700 cc.

On September 28, 1948, another attempt was made to complete the surgery. Patient was started on intermittent spinal anesthesia, with pontocaine in 10 per cent glucose. One intraspinal injection of 16 mg. of pontocaine was made in the third lumbar interspace, the patient reacted unfavorably relative to his blood pressure, and it took approximately one hour for the blood pressure to reach and maintain a proper level. Under the circumstances, surgery was postponed. In view of the persistence of considerable gastric retention, and the anesthesiologist's recommendation that conceivably the patient might well tolerate an intermittent spinal anesthetic given with repeated small doses of pontocaine, the operation was again attempted on October 14, 1948. Spinal anesthetic employed was intermittent spinal, pontocaine in 10 per cent glucose. Repeated doses of four mg. of pontocaine were given as needed in the third lumbar interspace. A total of thirty-two mg. of pontocaine was given and the patient maintained a satisfactory blood pressure level, and a subtotal gastric resection with an antecolic anastomosis was accomplished.

A small part of the pylorus was not resected at the time because of the dense fibrotic fusion of that part of the stomach to the anterior abdominal wall, and the fear of prolonging the operation too long because of the previous anesthetic difficulties. Postoperative course was uneventful. The new gastro-enterostomy stoma opened promptly. Patient was discharged from the hospital asymptomatic 17 days following the operation.

The patient was readmitted to the hospital on March 21, 1949, complaining of epigastric pain, vomiting of blood and tarry stools. Clinically the

patient was considered to have a bleeding gastrojejunal ulcer, although no evidence of one was seen by x-ray examination. The patient was taken to surgery on April 14, 1949, and under continuous spinal anesthesia the area of the gastrojejunal anastomosis was explored and an ulceration was found in the proximal jejunal loop. A pylorectomy was done as it was felt that this was the simplest procedure, and it was not considered advisable to prolong the operative procedure because of the patient's general condition and response to anesthetic agents. It was felt also that the pylorectomy, in itself, might result in the healing of the gastrojejunal ulcer. Postoperative convalescence was uneventful, and the patient was discharged asymptomatic May 4, 1949.

Summary and Conclusions

The more recent literature covering gastroduodenostomy has been reviewed and a case report of stomal ulcer following gastroduodenostomy presented.

In the reported case, an additional problem existed relative to the patient's response to the anesthetic. However, the position of the gastro-duodenal ulcer, with its proximity to the superior mesenteric vessels and mid-colic vessels, made the dissection extremely hazardous.

Due to the technical problems involved following the development of a stomal ulcer after gastroduodenostomy, this procedure is not recommended as an operation of choice for duodenal ulcer.

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Carotenemia: A Case Report

Walter L. Schafer, M.D., and Edwin L. Slentz, M.D.*

Wichita, Kansas

A clinical condition characterized by jaundice without involvement of the sclera due to the presence of excessive quantities of carotene in the blood was first described by Hess and Myers in 1919 and termed carotenemia.¹ In their description of this entity they reported its reproduction by feeding an excessive quantity of carrots, oranges and egg yolk to normal children for a period of five to seven weeks. Examination of the plasma revealed a benzene soluble yellow pigment which was found to be carotene.

The first reference to this condition was probably that of von Nordeen who, in 1907, described a similar clinical picture in young diabetic patients which he called xanthosis diabetica.²

Other names applied to this entity are xanthosis cutis and aurantiasis cutis, either of which is preferable to carotenemia since excessive quantities of carotene may be found in the blood without deposition of the pigment in the skin. In certain renal diseases carotinoids of the blood may reach extremely high levels without causing skin discoloration.³

Carotenemia may occur at any age and in individuals who are in perfect health. It, in itself, is a harmless condition which is manifest only by the yellow discoloration of the skin. There are apparently three etiological factors: diet, serum lipid level, and perhaps some disturbance in the metabolism of carotinoids.⁴ The diet is the most important factor. Without exception persons manifesting this condition give a history of ingestion of considerable quantities of foods which contain large amounts of carotinoids. Among the usual foods mentioned are carrots, oranges, spinach, and green beans. It has been known to occur from ingestion of a considerable quantity of papaya juice.⁵ The serum lipid level is thought to be of some importance as an etiological factor as carotenemia is reported to be more common in conditions associated with a high serum lipid, particularly diabetes mellitus, hypothyroidism, and nephrosis.⁶ The third factor in the etiology, that is a disturbance in carotinoid metabolism, has never been proved.

Clinically the jaundice occurs first in areas of the body with large numbers of sebaceous and sweat glands such as the palms, soles, nasolabial folds, et cetera. The pigment is thought to be excreted by these glands then rubbed into the superficial layers of the skin. Its onset is quite insidious and, with correction of the diet, its disappearance occurs slowly over a period of several weeks to months.

Case Report

J. H., a 17-month-old white male, was first observed to have a yellow discoloration of the skin at the age of eight months. This had gradually increased in intensity to the time of admission to the hospital for treatment of an unassociated otitis media. The patient was the third of four children, his siblings having had no similar condition. The past history revealed normal growth and development. He had suffered three attacks of otitis media previous to the present episode without sequela. He had had urticaria from various foods on several occasions. The dietary history revealed that he had eaten large quantities of commercially prepared mixed vegetables in preference to other foods. These were found to contain a large proportion of carrots.

Physical examination revealed a well developed, well nourished white child appearing about the stated age. There was a moderate generalized icterus more intense in those areas containing large numbers of sweat and sebaceous glands. The sclerae were clear. Both ear drums were red. No other significant physical findings were noted.

Laboratory data: Red blood cells, 3,320,000. Hemoglobin, 10.2 Gm.; white blood cells, 7,450 with normal differential count. Icterus index, 18. Red blood cell fragility, initial hemolysis at 0.4, complete at 0.3. Prothrombin time, 100 per cent of normal. Bleeding time, two minutes, 25 seconds. Clotting time, three minutes, 18 seconds. Urinalysis, completely normal. Examination of the serum by the method of Pett and LePage revealed carotene.

The diet was corrected with reduction of vegetables of high carotinoid content. The jaundice subsided slowly and was completely gone after eight weeks. There has been no recurrence.

Summary

A short review of carotenemia is given with a report of a case occurring in a 17-month-old child due to ingestion of large quantities of a commercially prepared vegetable mixture for infants. The clinical picture of jaundice without involvement of the sclerae should lead to the consideration of the diagnosis of carotenemia. The diagnosis is confirmed by the demonstration of the benzene soluble yellow pigment in the serum.

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*Department of Medicine, St. Francis Hospital.

Control vs. Eradication of Tuberculosis

Jay L. Sitterley, M.D.*

Topeka, Kansas

Kansas has the rather enviable record of having one of the lowest mortality rates for tuberculosis. During the year 1948, according to provisional reports, 240, or 13 per 100,000 population, died of this disease. This figure is approximately a 25 per cent decrease over the year 1947. Case reporting showed an 11 per cent increase between 1940 and 1947 inclusive. Of the total of 742 deaths from communicable diseases in 1947, tuberculosis accounted for 42.7 per cent or 317 of that number. In the United States between 1940 and 1947, the mortality dropped from 46 to 34 per 100,000, or 26 per cent. At the same time, the case rate increased from 76 to 93 per 100,000, or 22 per cent. This is not eradication, and I question its control.

These figures help to substantiate the observations of the author. Tuberculosis cannot be eradicated until it is under control, and control begins first by overcoming the apathy that exists in both the lay population and the medical profession. It is not controlled where persons with contagious disease are allowed complete freedom of activity under not even token supervision. The statement, "We have so much tuberculosis, we don't know what to do" is an admission of defeat.

All of the tools necessary for its control are present. They need but to be used. The medical profession—both general practitioner and specialist—can do much to further reduce the mortality and to turn the morbidity rate down again. The following plan is offered and can become a routine part of the office practice in the complete evaluation of a patient's complaints:

1. Tuberculin test all new patients on their first visit. The intradermal Mantoux, using either O.T. or P.P.D., is the preferred method. Correctly done

with a fresh solution, no more sensitive test exists. Lichtenstein, of the Municipal Sanatorium of Chicago, reports it in error 0.03 per cent in over 11,000 tests. A reaction is diminished or abolished in acute febrile episodes or in terminal tuberculosis.

2. Tuberculin test all non-reactors at yearly intervals. A reaction showing up in the year's lapse of time generally means infection took place within the past year. It should provoke two questions: What is the patient's tuberculous status now? Who is the source of infection? Further clinical and laboratory work will answer the first question. Of the second, since the family or other intimate associates are, in the greatest majority of cases, the source, it can be found by tuberculin-testing them. Many times these contacts are ignorant of their contagiousness.

3. X-ray all tuberculin reactors at yearly intervals, and x-ray all recent reactors at three to six-month intervals for the first two years. This time element varies with what is found at the first examination. As surely as a trip begins with one step, so does reinfection tuberculosis begin with a first infection. The so-called benign primary complex sets the stage for clinical tuberculosis later on.

In conclusion: despite the decreasing mortality, there is a definite morbidity increase of tuberculosis in Kansas and the United States; and since eradication is impossible without control first, and since, by the author's observation, there is apathy exhibited by both the patient and the profession, a systematic plan for its routine office detection is offered.

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SECOND ANNUAL MID-WEST CANCER CONFERENCE

Wichita, Kansas

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CHILD WELFARE PAGE

Epilepsy in Childhood

IMPORTANCE. Conservatively estimated, there are at least 2,000 children with epilepsy in Kansas.

ETIOLOGY. Diverse, but usually on a basis of organic brain changes. Birth injuries account for about 25 per cent of all cases, with cerebrovascular accidents (of infancy and childhood), head injuries and miscellaneous diseases contributing about as many again. A clear pattern of genetic heredity is present in only a small minority of cases, but in some others the tendency to develop convulsions—after a head injury, for example—may have been inherited. Metabolic factors, such as nutritional status, acid-base balance, temperature, fatigue states, menstruation, emotional tensions, are important modifiers of the quantity and quality of seizures.

TYPES. Grand mal includes diffuse and focal major convulsions. Petit mal takes in a variety of manifestations: simple petit mal (staring), "drop" or akinetic attacks, minor or abortive motor seizures, so called psychomotor equivalents, and a number of rare forms.

DIAGNOSIS. Intelligent treatment absolutely requires a tight diagnosis, ruling out non-epileptic conditions and establishing a cause as far as possible. Diagnostic measures include: (1) a careful history, emphasizing birth data and the pattern of the seizures, (2) thorough physical exam with a meticulous neurological (3) provocative measures, hydration and overventilation, for producing seizures under test circumstances, (4) electroencephalogram, (5) pneumoencephalogram, (6) in infants particularly, a sub-dural tap to rule out hematomata and (7) psychometric studies.

TREATMENT. The sine qua non of treatment is reduction of the number and intensity of convulsions to the point that the child may lead a reasonably normal life. Surgical excision of an epileptogenic area, or removal of a subdural hematoma, has produced some dramatic cures, but chief reliance must be placed on drugs and the control of environmental and metabolic factors. Phenobarbital and hydantoin derivatives (such as Dilantin) are best for motor seizures; tridione, benzedrine, and ketogenic diets, for simple petit mal. As all these drugs have potentially harmful side-actions and none are absolutely effective, their use requires knowledge, skill and painstaking experimentation.

THE PSYCHIATRIC COMPONENT. To the child, epilepsy is a disease which frightens him, is never explained satisfactorily, sets him apart from other children and provokes their derision, is frequently embarrassing and often dangerous, interferes with study and sport and most normal activities, requires much dosing and medical care, arouses in his parents conflicting feelings of guilt, rejection and oversolicitude and in the public mind, suspicion and mistrust. Small wonder that an "epileptic personality" develops, which may in turn intensify the seizures. Medical supervision must include helping the child to understand himself and his special problem.

CANCER PAGE

Diagnostic Tumor Clinics

In the fall of 1946, the Kansas Division of the American Cancer Society set about to determine in what areas and by what means the Society might make its resources available to strengthen the medical service portion of the cancer control program in Kansas. The Committee on Control of Cancer of the Kansas Medical Society was asked to study this problem and make recommendations to the Society.

After careful analysis of the situation, and with due regard to all the factors involved, the committee decided that the Society could best use its influence and funds toward the development of a medical service program which would assist local communities in improving and expanding their treatment facilities. Definite recommendations were made to the Society regarding its responsibility in the areas of "detection," "diagnosis," and "treatment." These recommendations were accepted in their entirety and plans were immediately made to place the program into operation.

Perhaps one of the most effective portions of the medical service program has been the organization of diagnostic tumor clinics in hospitals approved by the American College of Surgeons. Since November 1946, 26 clinics have been organized which have met the standards established by the Committee on Control of Cancer and are receiving financial assistance from the Kansas Division.

The success of these clinics is due largely to the interest and initiative which have been displayed on the part of hospital staffs and personnel in the hospitals in which the clinics are located. This cooperation has enabled Kansas to receive nation-wide attention for this unique approach to the problem of cancer diagnosis.

The purpose of the diagnostic tumor clinic is two-fold: (1) to study all of the tumor cases admitted to the hospital in which the clinic is located; and (2) to provide a consultant group to which any physician may refer a case for discussion and recommendations. The values of such a service are readily apparent in terms of expanding the interest of the profession in the cancer control problem.

The diagnostic tumor clinics now in operation are listed below:

<i>Hospital and Location</i>	<i>Date of Organization</i>	<i>Hospital and Location</i>	<i>Date of Organization</i>
Mercy Hospital, Parsons	November 8, 1946	Mercy Hospital, Independence.....	October 10, 1947
Hatcher Hospital, Wellington.....	December 3, 1946	Bethany Hospital, Kansas City.....	October 13, 1947
William Newton Memorial Hospital, Winfield	January 8, 1947	St. Anthony's Hospital, Hays.....	October 15, 1947
St. Mary's Hospital, Winfield.....	January 8, 1947	Wichita Hospital, Wichita.....	October 20, 1947
St. John's Hospital, Salina.....	April 28, 1947	St. Mary's Hospital, Emporia.....	November 18, 1947
Newman Memorial Hospital, Emporia	May 8, 1947	Stormont Hospital, Topeka.....	December 17, 1947
St. Francis Hospital, Wichita.....	May 19, 1947	St. Anthony's Hospital, Sabetha.....	April, 1948
Providence Hospital, Kansas City.....	May 23, 1947	Lawrence Diagnostic Tumor Clinic, Lawrence	June, 1948
St. Margaret's Hospital, Kansas City.....	May 23, 1947	Chirst's Hospital, Topeka.....	October 25, 1948
St. Joseph's Hospital, Concordia.....	July 1, 1947	St. Rose Hospital, Great Bend.....	December 15, 1948
Susan B. Allen Hospital, El Dorado.....	July 1, 1947	St. Francis Hospital, Topeka.....	December 20, 1948
Asbury Hospital, Salina.....	September 15, 1947	Sedgwick County Tumor Clinic, Wichita, Kansas.....	November 15, 1948
Wesley Hospital, Wichita.....	October 1, 1947	St. Anthony's Hospital, Dodge City.....	July, 1949

Other hospitals interested in establishing diagnostic tumor clinics may secure full information from the Kansas Division, American Cancer Society, 506 New England Building, Topeka, Kansas.

PRESIDENT'S PAGE

Dear Doctor:

We should not be lulled into peaceful relaxation in the belief that the administration's socialized medicine plans have been killed. Remember, it is the wounded bear that kills the hunter.

We now face the strategy of finding socialized medicine parcelled into innocent looking packages. It is being disguised under titles that appear to have no bearing on medical care. Take S. 1411 for an example. This bill on aid to education has already passed the Senate and will be acted on by the House at its next session. Hidden in this bill is the provision permitting all children between the ages of five and 17 years, in public and parochial schools, to have medical examinations and medical treatment at federal expense.

S. 1411 and S. 1453, another dangerous measure, will be fully analyzed in the next issue of Medical Economics. Every doctor should read this article and point out the dangers of these bills to the Congressman of his district.

Occasionally I hear someone say that things have gone too far to stop socialization, but remember you cannot have liberty for nothing. If it is not worth defending we do not deserve it. We can still turn the tide if every one of us would spend one or two minutes with each patient discussing Americanism and the fundamentals that have made this nation great.

Many are giving great service to medicine in Kansas. Our medical school under the effective and visionary leadership of Dean Murphy is progressing rapidly. So is the program for improving our mental hospitals, thanks to Dr. O. W. Davidson, Dr. Karl Menninger and many others. The committees of the Society are contributing much toward giving the people of our state better care and their efforts are deeply appreciated. And many of you have shared in the magnificent task of bringing the Kansas Plan such a long way toward fulfillment.

With humility we are facing many problems to be solved during the remainder of the year. However, we find the spirit of cooperation demonstrated by you, the Kansas doctors, adds to our courage in facing these problems.

Sincerely,

Haddon Perch, M.D.

EDITORIAL COMMENT

Federal Legislation

At a recent meeting in Kansas City a representative of the Washington A.M.A. office told physicians of some of the federal legislation that is of particular interest to the medical profession. The 81st Congress had hundreds of bills introduced that had something or other to do with medical care or health. Very few of these passed, but very few were killed. The majority will receive attention in one way or another during the session beginning in January.

Senate Bill 247, which creates a National Science Foundation, passed the Senate at the last session and will be considered by the House next year. This bill has the complete approval of the A.M.A. and represents a forward step in the coordination of all scientific research on a national scale. S. B. 522 is in a similar position, having passed the Senate. It offers aid to public health units in establishing full time operations.

The National School Health Service Act, S. B. 1411, will be of great importance next year. This also has passed the Senate and will be acted upon in the House. Included in this bill in Part C, Section 6, is the provision that all school children in parochial or public schools who are between the ages of five and 17 may be provided with physical examinations and treatment at federal expense. The A.M.A. approves the rest of the bill but will attempt to have that section deleted because it provides complete socialized medicine for all school children in the nation. Illustrating the dangers involved is the fact that there will be no more hearings on this bill. It will merely come to a vote in the House and, unless changed at that time through the passage of an amendment, will become law.

Another controversial measure is S. B. 1453, a bill to aid medical education. The A.M.A. assisted in preparing this bill. It was designed to offer \$500 to a medical school for each student up to the normal enrollment. For every student accepted above the normal enrollment, an additional \$500 could be obtained. This was for the purpose of giving financial assistance to schools and providing additional equipment and faculty members. Again, this bill passed the Senate, but just before passage an amendment was adopted that permits schools of osteopathy, chiropractic, etc., to come under these provisions. The great danger involved is that a mushroom growth of unqualified schools may be expected. Since they have no normal enrollment, the new schools may therefore obtain \$1,000 annually for each student enrolled. This bill or its companion, H. R. 5940, will be considered by the House next year.

H. R. 6000 is a long bill of more than 200 pages revising the social security program. There are features concerning disability that are questionable and are considered to be backdoor attempts to further the cause of socialization. This bill, however, has not been completely reviewed and will be discussed in a later issue.

S. B. 1679 is dead for the present. That is the administration's National Health Act. It is the principal socialized medicine bill. However, other bills will be introduced in the next session.

Of particular interest to the medical profession is the change in the Hill-Burton bill for federal aid to hospital construction. This bill passed both houses and has been signed by the President. It extends this program for an additional five years and allots more money to the states. Kansas will benefit by receiving about one million dollars more each year than was given under the old Hill-Burton act. The state Advisory Council has voted to increase the federal participation to 40 per cent of total hospital costs, so individual hospitals will receive more money and a larger number of hospitals can be benefitted.

According to figures recently released by the Kansas State Board of Health, there are now 28 hospitals under construction in Kansas. An additional 14 have their plans completed and will begin work in the near future. Five have recently been completed and are now in operation. It is of interest to note that less than half of these projects utilized this federal aid, preferring to build entirely from local funds rather than to accept federal aid, even though a minimum of control is exercised in the use of this money.

Scrutiny of Income Tax Returns

Business analysts have recently reviewed for their customers the reasons underlying the federal government's increased interest in individual income tax returns. Their findings might be of benefit to the medical profession.

This year the Bureau of Internal Revenue will have employed 27,000 agents. This will enable the closer scrutiny of income tax returns than at any other time. A few years ago, with less than half the present number of agents, the government collected almost 400 million dollars in extra revenue. This year they expect to collect more than two billion dollars in taxes in instances where individuals attempted to avoid paying or where errors had been made in the returns.

It has long been known by the government that errors or dishonesty in making returns occur most frequently among self-employed individuals such as

doctors, lawyers, farmers, etc. Their bookkeeping is less efficient than methods employed by business firms, and most of their transactions are cash. These groups have been rather carefully checked for some years and this process will continue with even greater vigor in the future. It is readily understandable when it is noted that more than 50 per cent of all evasion was detected in returns showing incomes of \$7,000 or more.

Closer scrutiny of incomes falling between \$5,000 and \$7,000 will be noted. Until now these have been spot-checked, but with some two million returns falling into this range the government plans detailed auditing of a much higher percentage in the future. Study of returns listing less than \$5,000 will probably not be undertaken extensively until 1952 or later.

Many persons will be asked to produce records supporting their claims. In the next year or two the professional man who is not investigated may well be the exception rather than the rule. The report also suggests that returns for the taxable year 1945 and earlier are relatively safe, except in those instances where the government has reason to believe that fraud was attempted. Primary attention will be given the years 1946 and 1947, particularly to the physicians' group, because their incomes increased sharply during the war years.

To be safe a physician should keep careful records of all transactions. His books should not be discarded for at least five years. Much grief might be spared if a competent tax expert would be employed to assist the physician in making out his returns. This could incidentally save the taxpayer considerable sums of money in interest and penalties.

As an employer the physician also has certain responsibilities. Withholding taxes on the salaries of employees are required to be deposited monthly, and only one in three employers abides by these regulations at present.

The Bureau's goal is to verify every return they get, at least as to mathematics. There are some 53 million returns and of course it will be a physical impossibility to make a detailed analysis of each of these, but with added personnel and much new accounting equipment the government will make a closer scrutiny of more returns this year than ever before.

Understanding the Diabetic

A human and practical view of the diabetic was presented by a physician in an article for the Nassau Medical News. He said diabetics resent diabetes. They resent its restrictions. They resent the fact that they will always have the illness.

First they wonder if the rules are necessary and

then chafe at regimentation, dictatorship and segregation. If there is an illness which exposes patients to these three unfriendly states, it is definitely this one, and the harsh part of it is that it is for life. To add to the difficulties is the fact that the patient tends to identify the physician with the disease and the relationship becomes complicated. More often than not the office visit is a third degree between the policeman and the suspected criminal.

A minority of physicians doing diabetes work have experimented with relieving the patient from dietary restrictions, giving him enough insulin to keep the weight consistent, allowing sugar to spill, and considering the case satisfactory as long as the patient feels well. This philosophy avoids regimentation, but it is a radical concept requiring a great deal of insulin, which adds to the hazards of reactions and perhaps will hasten blood vessel complications.

On the other extreme is a group that treats diabetes with very little insulin or none at all, simply by very rigorous dietary measures. The author of this paper believes both to be extreme measures that might work only occasionally under selected conditions. Accidents can occur under the former method of treatment, and the patient's inability to remain on a highly restricted diet presents a hazard in the latter.

He advocates treatment somewhere between these extremes with more emphasis being placed on the patient's mental condition. As a rule, the diabetic becomes neglected by his doctor. The patient is occasionally scolded and then he gets mad. He is mad at the disease anyway, and now mad at the doctor too and annoyed by his illness. The patient needs more than a pat on the back. A sugar-free specimen is hardly sufficient reward for weeks of ardent self control. The patient wants to feel that his doctor is vitally concerned and as pleased about his good conduct and discipline as he is himself.

If the patient is given a clear view of his condition early, he will at least understand what is to be expected of him. If the doctor can make the rules simple, that also will help. The best outlook for the diabetic is to remove as much as possible his resentment toward his illness. This is done by evidencing interest and encouragement, by forgiving dietary indiscretions, for they will happen, and by arranging a program which is within the patient's ability to follow.

Maternal Mortality

The A.M.A.'s Bureau of Medical Economic Research recently prepared figures on maternal mortality for all states, contrasting the year 1948 with 1947 and 1933. In almost every instance these rates have improved. The best state in the nation,

Oregon, reported a rate of 0.4 per thousand live births. Kansas stands well toward the middle with 0.9. Only six states have a rate over 2.0.

In 1933 there was not a single state with a death rate below 4.0. The highest in 1933 was 11.5. In that period of 15 years the United States had made tremendous progress on maternal mortality, the rate declining from 6.2 to 1.2.

Perhaps even more significant is the fact that the gap between the state with the highest mortality and the state with the lowest is being closed. In 1933 there was 7.2 difference between the states with the best and the poorest records. In 1948 it was 2.3. Stating this in another way, the highest state rate in 1948 was 2.7, less than two-thirds of the rate, 4.3, for the best state in 1933. In as far as this one group of vital statistics can be considered an index of health, it illustrates that all parts of the country, the wealthier and the poorer, the warmer and the colder climates, the white and the non-white population have benefitted alike in receiving adequate medical care.

Attack on Heart Disease

A large scale, nationwide attack on heart disease was launched in September when a total of \$8,614,737 in federal funds was awarded to 85 medical schools and research institutions in 34 states and the District of Columbia, according to announcement by the Federal Security Agency.

The grants included several for the University of Kansas School of Medicine, the largest of which was \$100,000 for building a cardiovascular unit adjoining the out-patient clinic and hospital. An additional \$14,000 was given for the establishment of a new training program, and \$25,000 was marked for research, a continuation of a project already begun by Dr. Paul W. Schafer, chief of the department of surgery. The research grant was listed as "Further development and exploitation of a physiology laboratory for the study of cardiovascular disease in animals and man."

"This marks the first broad scale federal support of the attack on heart disease under the National Heart Institute," said Surgeon General Leonard A. Scheele. "It complements the programs of the American Heart Association and other non-governmental groups. Alone, neither the privately supported programs nor the federal effort would provide this urgently needed mobilization of forces against the leading cause of death in the United States."

Medical science has now classified more than 20 types of heart disease as capable of causing death, but only five account for the majority of fatalities, according to Dr. C. J. Van Slyke, director of the

National Heart Institute. The five most fatal types are: congenital malformation, rheumatic heart disease, syphilitic heart disease, hypertension, and coronary arteriosclerosis. All types together claim over 625,000 lives annually.

In an effort to learn more about the diseases of the heart and blood vessels and how to deal effectively with them, research scientists will utilize the grants to investigate on broad fronts the problems involved. Environmental and hereditary factors as they may relate to heart disease will come under observation. Scientists will evaluate dietary factors, new surgical methods, the usefulness of new drugs, and new substances such as ACTH (adrenocorticotrophic hormone) and Cortisone (Compound "E"). New diagnostic instruments, such as the electrokymograph, an apparatus used to investigate the movements of the heart, and the ballistocardiograph, which indirectly determines cardiac output, will be further evaluated for their usefulness. Other grants will support investigations seeking to perfect a "mechanical" heart to replace the human heart during operations upon it.

Diet will be investigated in order to determine more clearly its role in arteriosclerosis, the disease in which the arteries are narrowed and become brittle. Scientists have found that in a great number of cases of arteriosclerosis, the blood level of cholesterol is higher than usual. They have also found that cholesterol forms part of the ulcer-like lesions on the walls that frequently become sites for the dangerous blood clots responsible for heart attacks. By feeding one group of animals a diet rich in cholesterol and another group a diet poor in cholesterol, it may be possible to establish some relationship between diet and arteriosclerosis. In other projects cholesterol will also be tagged with radioactive carbon in order to study how the body handles the fatty substance.

In an effort to learn more about what causes rheumatic fever, the great crippler of children's hearts, investigators will be given financial aid in their attempt to learn what part the adrenal cortex gland plays in protecting the body against "allergic" reactions. A prevailing theory is that the normal adrenal cortex exerts a protective action against unusual sensitivity. It is possible this gland is injured during a streptococcus infection and thus is incapable of exerting this protective action, as a result of which rheumatic fever follows. By studying the activity of adrenal cortical functions in patients with scarlet fever, a streptococcal infection, and acute rheumatic fever, it is hoped to learn something about both rheumatic fever and the action of the adrenal gland.

SOCIALIZED MEDICINE

Editor's Note. This is the sixth of a series of articles dealing with federal compulsory health insurance. These are designed to give the physician factual information and reliable data which may be used in the preparation of articles or speeches on this important subject. Additional material will be presented in subsequent issues.

American Earning Power

The cost of medical care is the biggest argument social planners have at their disposal in their crusade for government medicine. All such propaganda begins with the statement that millions of people lack proper medical care because they cannot pay the price. A great many learned arguments have been developed to prove that contention false but none carry the appeal that is created in the public mind by the suggestion that we, as Americans, are not getting all we have coming to us. There are, however, two arguments that should settle this issue for any person who is willing to give the subject a moment's thought.

The first concerns voluntary prepaid insurance. There can be no doubt in the mind of anyone that a cooperative non-profit plan operated by physicians and subscribers will be less expensive than a comparable program directed by bureaus of the federal government. This fact is so simple, so conclusive, and so instantly apparent that no further discussion should be needed.

The second is more involved but can be used to dramatic effect if carefully introduced. Americans are dollar conscious and have come to place absolute confidence in the gold standard as set by this nation. A few are only now beginning to learn the fallacy of this trust, discovering that a dollar is without intrinsic value. It is worth only a relative amount based on a formula that involves the amount of time a person must work to earn this dollar and what it will purchase. The possession of a dollar is of significance only in terms of what it costs and what it will buy.

A man recently returned from China illustrated this principle by telling of having purchased an airplane ticket for a 500-mile trip. This required a carload of bills in large denomination and occupied the time of 11 clerks for four hours merely in counting. In a recent speech in Kansas Mr. Louis Bromfield told of a German who paid off a 100-year-old mortgage on his farm through the sale of a wheelbarrow full of potatoes.

The important consideration is not whether an

appendectomy costs \$150 but how long the patient has worked to earn \$150 and the relationship of that sum to the price of other commodities. The cost of medical care is not a problem to be answered in terms of dollars. If compared with other commodities, as in the second of this series in the August issue of the Journal, it will be found not to be excessive. If studied in relation to costs in other countries where socialized medicine exists, it will be found to be very low.

The Standard Steel Spring Company of Pennsylvania has released some interesting statistics in its recent advertising literature. By way of example, they reported that in the United States a two-pants wool suit may be purchased for an average of 38½ hours of work. The Englishman would work 163 hours for that same suit, and the Russian 506 hours. In the length of time it would take the Russian to earn enough to purchase one suit, the American would have earned enough to buy 13. His purchasing power is four times that of the Englishman. Other items are comparable. Men's dress shoes may be purchased in the United States for 6¼ hours work, in Great Britain for 25½ hours work, and in Russia for 145 hours of labor. A cotton housedress requires 2¼ hours work in this country, 10½ in Great Britain, and 28 in Russia. These figures are recent, carrying a date of February, 1949.

It is only natural, therefore, that Americans should own more commodities because their purchasing power is far greater. They are wealthier. In the United States one out of every four people owns a car; in socialist England there is one car for every 22; in communist Russia, one for 252. In the free United States one of every three people owns a radio; in England there is one for five, and in Russia one for 45. Or take the telephone. In America there is one telephone for every five people; in socialist England there is one for every 155; in communist Russia there is one for every 188.

It is of no more consequence whether a surgical procedure costs \$100 or \$1,000 than whether a suit of clothes costs \$10 or \$100. The important factor is how long a person must work before he can earn enough to pay for what he wants or needs. The purchasing power of the average American exceeds that of the citizen of any other nation. He is able to buy more necessities and also more luxuries. On the same basis his medical expenses will be less than elsewhere regardless of whether medicine is practiced under free enterprise or doled out by the government.

91st Annual Meeting, Kansas Medical Society,
Wichita, Kansas, May 15-18, 1950.

BLUE SHIELD

Press Relations

How has the public accepted the announcement of Blue Shield contract changes and particularly the increased dues? While it is too early to make any definite statement, there are some straws in the wind.

The entire membership has been notified of the changes. The real test of acceptance will not be felt until December 15, when more than one-half of the members will have been billed at the new rates. There have been almost no letters of criticism either by companies or individuals.

The Blue Shield news release, announcing the changes, was printed verbatim in a large number of papers widely scattered over the state. While an important item in the changes was the substantial increase in dues, newspaper headlines gave more prominence to the changes in the services than they did the dues increase. It is interesting that the papers in areas where county-wide enrollment campaigns had been held printed the entire news release. It would seem that the editors in these areas, where local citizens have volunteered in the enrollment work, have become aware of the community significance of Blue Cross and Blue Shield. Below is the one editorial which was partially critical. It was first published in the Hutchinson News Herald and copied in the Salina Journal under the heading "Insufficient Shield."

"Blue Cross has made such great strides that today it is the exceptional person who does not carry one of these co-op insurance policies which for a small monthly payment provides for almost all the hospitalization a family needs.

"Blue Shield, while it was a later starter, also is making remarkable growth. In a few more years it may cover as many as Blue Cross now does, in insuring them against some of the medical costs they may be up against.

"But as the answer to socialized medicine, Blue Shield, as presently constituted, never can be the satisfactory thing Blue Cross has proved itself to be. The Blue Shield is too specialized. Its limits are too narrow. It is designed to cover only the extraordinary, the emergencies, the once-in-a-lifetime affairs.

"For the average family it is not operations, cancer, or broken bones that account for most of the doctor bills. It is the stomach aches, the cuts and bruises, the childhood diseases, and the infirmities that come with advancing years, which call for the bulk of the medical care and cost.

"By and large, Blue Shield ignores all these routine illnesses. If it ever is to knock down arguments of the socialized medicine advocates, it must be expanded to cover the cost of the doctor, irrespective of the complaint he may be called upon to treat. Such expansion never will come, however, unless the medical profession takes the leadership in bringing it about."

Dr. L. S. Nelson and Dr. Leo J. Schaefer of Salina felt that this editorial should be answered. They have drafted a reply to the Salina Journal somewhat along the following lines.

"Your editorial on Blue Shield in the November 19 issue of the Journal raised some interesting and vital questions as to what a voluntary prepayment plan should try to do.

"Your editorial suggests that the bulk of medical care occurs in the incidence of cuts, bruises, minor complaints and care of the aged. This may be true. But such costs are spread over the years in small amounts for each family. If Blue Shield were to include these minor treatments in its services it would mean that a high proportion of the dues paid by members would have to be used for relatively small expenses. These small expenses can be met by most of us at the time they are incurred without help from a prepayment plan. If the Blue Shield funds were used for this purpose it would drain its resources to the extent that greater limitations would have to be placed on the more serious and costly services. If Blue Shield tried to cover both the small and large expenses, the membership dues would have to be increased perhaps beyond the point which people of moderate income could afford.

"The editorial suggests that Blue Shield, at present, covers only the extraordinary emergencies, quote, 'the once in a life-time affairs.' Actually however, we believe that a review of the Blue Shield services would show that the plan covers a considerable range of illnesses, many of which occur rather frequently. For example, the services of the plan may be broadly described as follows: surgery, treatment of fractures and dislocations, anesthesia, maternity services, medical (non-surgical) care in the hospital for 30 days each year, diagnostic x-ray following an accident and x-ray therapy for treatment of cancer. Far from being as limited as your editorial suggests, these services actually are being used by about 160 members out of every 1,000 each year. This means that almost one member out of six uses the services each year.

"While we are aware that Blue Shield may be improved gradually as we gain experience, we feel strongly that the present plan is a good one. It provides a broad coverage at reasonable dues which people have been willing to pay in increasing numbers. It is true that the primary emphasis of the plan,

at present, is on treatment of illnesses which involve more than the small expense of a single visit to a doctor's office. In other word the emphasis tends to be on the more serious illnesses. However, as indicated above Blue Shield is currently providing services such as maternity services, tonsil and adenoid services and many others which are frequent causes for medical expenses for the average family. About two-thirds of all hospital care is for surgery and maternity care.

"The real solution to making Blue Shield more adaptable to the growing medical needs of people lies in an intelligent understanding of the purpose of the plan by the medical profession on the one hand and the public on the other. When these two groups have established close communications with each other to the point where they can understand their mutual needs, we believe that Blue Shield will be in a better position to adapt itself to these needs. Progress in this direction has been good and is continuing at a greater rate every day.

"Having seen the benefits of voluntary, prepaid medical care plans in operation as frequently as we have, we are indeed glad to sign the above statement."

(Signed) L. S. Nelson, M.D.
Leo J. Schaefer, M.D.

* * *

New Bulletin for Physicians

In December the first issue of a new bulletin for participating physicians will be sent to the more than 1400 Blue Shield participating physicians in Kansas. This bulletin will be called "December Memo to Participating Physicians." Its purpose will be to provide doctors with news of the progress of Blue Shield, both from a national and a local point of view. Also the memo will keep physicians up to date in all matters regarding interpretation of the Blue Shield contract and other points which affect members and doctors. The style of the memo will be brief and factual.

COUNTY SOCIETIES

The Reno County Medical Society met October 26 at the Officers' Club, Hutchinson, with physicians from adjoining counties as guests. Dr. Charles C. Dennie, Kansas City, Missouri, spoke on "Management of Atopic Dermatitis and the Newer Treatment of Syphilis."

* * *

Fourteen members of the Franklin County Society met October 26 at Ransom Hospital, Ottawa. Guest speaker was Dr. J. L. Lattimore, Topeka.

* * *

The Nemaha County Society entertained members of the Auxiliary at a dinner meeting at the Sabetha

Country Club October 25. Dr. Manuel Escudaro of the Menninger Foundation, Topeka, spoke on child psychology and the general practice of medicine.

* * *

Thirty physicians who are members of the Tri-County Medical Society met at the Arkansas City Country Club October 27. Dr. Harrell C. Dodson, Jr., of the University of Oklahoma Medical School, spoke on "The Treatment of Postoperative Complications," and Dr. Mahlon H. Delp, of the University of Kansas Medical Center, discussed "Syphilitic Heart Disease and Its Treatment with Penicillin."

* * *

A meeting of the Harvey County Society was held at the Ripley Hotel, Newton, in October. Dr. C. D. Shrader discussed "Diseases of the Kidneys" and showed illustrative films.

* * *

Sponsorship of a medical speakers' bureau for the benefit of Emporia clubs was one of the fall projects of the Lyon County Society. Under the plan, clubs desiring speakers may obtain them by making application. Topics to be presented are: Endocrine or Metabolic Diseases, Dr. Edward J. Ryan; Immunology, Dr. C. H. Munger; Communicable Diseases, Dr. C. R. Hopper; Maternal Care, Dr. David L. Traylor; Maternal and Infant Care, Dr. Rodger A. Moon; Pediatrics, Dr. David L. Davis; Psychiatry, Dr. Rodger A. Moon and Dr. Philip W. Morgan; Cancer, Dr. Thomas P. Butcher, Dr. J. J. Hovorka and Dr. John Lloyd Morgan; The Place of Surgery in Modern Medicine, Dr. Thomas P. Butcher; New Aspects of Medicine, Dr. Kenneth L. Lohmeyer; Prevention and Treatment of Deafness in Children, Dr. E. L. Gann; Trends in Anesthesia, Dr. Harold F. Spencer. Dr. Thomas P. Butcher and a lay speaker, President Paul B. McCleave of the College of Emporia, will be available for discussions on Socialized Medicine.

* * *

Dr. William Brownlee of Hutchinson, who recently returned from spending two years in Germany as a medical officer, addressed the Rice County Society at a recent meeting. His subject was "Recent Observations in Germany."

* * *

Thirty-nine physicians met at Larned November 16 for the fifth meeting of the Midwest Kansas Medical Society. Dr. Edwin D. Bayrd of the hematology section of the Mayo Clinic discussed "Newer Concepts in the Management of Leukemia and the Malignant Lymphomas." This society was organized by the county societies of the area to pool membership and make possible the securing of nationally known speakers for four or five meetings during each year. The next meeting is tentatively planned for Stafford early in 1950.

KANSAS STATE BOARD OF HEALTH

State and Local Responsibility for Health

Message delivered by Governor Frank Carlson at State Health Conference held at Wichita, November 7, 1949.

It is indeed gratifying to see so many of you responding to an invitation to consider the health and well-being of every Kansas citizen. One of the most important resources of any state is the health of its people. With your friends and neighbors, you have chosen to assemble in true democratic fashion upon the call of your governor to assist in safeguarding the human resources of our state.

The mid-point of a century has been a traditional time for stock taking. The 20th century, in carving its place deep in the walls of time, is unsurpassed in the destructive forces discovered and unleashed against mankind. To balance the ledger sheet, the 20th century so far has also produced the greatest life saving devices, drugs and procedures dreamed of by man. What a century this would be if we could work out in the remaining years a permanent pattern for peace and to apply our "know how" to the service of humanity. The atomic age—in opening a new world to us—has brought an urgent need to find the way to a peaceful understanding, and tolerant world—working out our differences across the table instead of the battlefield.

To emphasize this thought, I am reminded of an old story of a golf player who drove his ball on top of an ant hill. In his anger, he swung viciously at the ball, cutting a swath underneath the ball and through the ant hill. He swung again—and again—further reducing the ant hill but making no progress with the ball. One of the remaining ants in the hill spoke up to his fellows and said, "If we want to get out of this alive, we'd better get on the ball."

You may wonder what all this has to do with Kansas and health. At this mid-point of the century we realize that we have focused our drive, our best brains, money and effort in exploring and developing the material resources of not only our own country but of the world. For our own self preservation and security we must now turn our thoughts and energies to exploring and developing the spiritual and human resources, out of which will come the kind of world we want for our children.

In an address entitled "The Strength of Kansas," given by Milton Eisenhower at the last annual meeting of the Native Sons and Daughters of Kansas, he had this to say:

"The United States of America is now the Atlas of the free world. We must for the time being sup-

port that world upon our shoulders—until it is strong enough to walk with us on paths of peace. If our muscles weaken, if we collapse, the entire free world will fall with us to be shattered on the rocks of totalitarianism.

"And Kansas is the heart of Atlas! Herein lies our state's great strength, her special function, her enormous opportunity to serve mankind. Geographically and spiritually, Kansas is at the heart of our continental power.

"We are balanced halfway between the America facing Europe and the America facing China; we are that happy mixture of town and country, agriculture and industry, which seems best suited to the maintenance of democratic attitudes; and we have a state spirit which is a unique mingling of Puritan morality, Southern chivalry, and Western individualism. No state is more accurately representative of America as a whole than Kansas, and none is placed in a more decisive strategic position. Removed somewhat from the waves of event which beat so furiously on America's shores, protected against the shocking impact of those waves, Kansas can keep her perspective—and what she decides to do can often determine the role of our nation as a whole."

Blessed with an environment abundant in its life-supporting products—springing from a stock of hardy pioneers—believing in and practicing healthful living are the factors which have placed Kansans among the healthiest peoples on earth. Under the sampling provided by standards established in the examinations for Selective Service in the armed forces, only one other state had a smaller percentage of its men disqualified because of disease or physical defects.

The strength of Kansas lies in her people. The maintenance of this natural and abundant heritage of vigor, vitality, and good health is the responsibility of every citizen. This is one of the important functions of government that must be kept close to the people. Through the years our state legislature has strengthened local governmental units in this field. Legislation has been passed that enables communities to organize official boards of health on a city, county, or on the basis of a combination of counties and cities. Further provisions have been made for financing services of full-time personnel which these local boards of health feel are necessary. In addition federal grants to the state in the field of health are available to aid in financing local health services.

In no other area of governmental activity has our state legislature given such freedom of action to communities than in matters pertaining to health. The construction, maintenance and operation of hospitals follow a somewhat similar pattern. The ability of our cities and counties to work together on an

official basis through the pooling of tax funds, personnel, and joint boards in the solution of common problems is being eagerly watched by students of government. Perhaps no other field offers the same opportunity for collective community action in effective and efficient use of the tax dollar. The spread of disease, securing and maintaining adequate safe water supplies, problems of sewage disposal, construction and operation of hospitals, the pollution of waterways, insect and rodent control, industrial wastes—all are problems pertinent to our well-being—yet, are not limited by boundaries.

The role of the state and federal government in the solution of health problems should be a relatively minor one. State and federal agencies can function best in handling major epidemics or problems such as stream pollution which are costly and involve large areas or transcend state boundaries.

Furnishing of expert consultants and financial aid, when needed, without control, are other acceptable services. The farther away we get from community or local interest and action in meeting the needs of the people, the closer we come to a welfare state. The right of the individual to solve his own problems is basic in our democratic way of life.

Forty years ago Governor Hoch called a meeting of interested citizens of the state to consider the problems involved in the control of the leading cause of death which, at that time, was tuberculosis. From that meeting stemmed the leadership and state-wide interest that produced, through the legislature, the funds to start an educational control program and to build the State Sanatorium at Norton. Today, tuberculosis is in ninth place as a cause of death in Kansas, and our stepped-up control programs aimed at the eradication of this disease reduced the death rate 25 per cent last year. In terms of lives, the yearly average number of deaths from tuberculosis 40 years ago was 925, compared to 239 for last year. At that time more than 2,000 persons annually were estimated to have been incapacitated for the first time from tuberculosis, compared to half that number in 1948. These figures represent a great economic saving to the state, not only through increased productive capacity in the saving of lives which might have been lost but also in decreasing the heavy financial load of the thousands crippled by this preventable disease.

This worthy accomplishment is an example of state-wide cooperative action on the part of all the citizens of the state.

Another example of the progress we have made in the field of health was called to my attention in reading an editorial in the Topeka Daily Capital of November 1, entitled "Saving Mothers' Lives."

"In 1930, a Kansas mother had one chance in 145

of death associated with childbirth or complications of pregnancy. But by 1940 the toll had been reduced until there was only one chance in 278. And, based on figures collected by the State Board of Health during the first three-quarters of this year, the averages now stand at only one chance in 1,560 of such deaths.

"This is an incredibly swift rise in medical progress in this particular field, and a great many Kansans deserve praise for contributing toward making it possible.

"Members of the medical profession of course have learned a great deal during the last couple of decades. In the same way, the techniques of nursing have taken advantage of the latest developments that have been applied in Kansas.

"Laymen, too, have been educated to the fact that childbirth need not be dangerous, and there has been a sudden change in the turn from homes to hospitals.

"Not many years ago it was routine for births to occur in homes, and only the wealthy or those who had particular concern for the mothers took advantage of hospitals. In part, this was because hospitals were few, and in part it was because of a lack of realization that hospital care is superior to that in the best of homes. Today, sending an expectant mother to a hospital has become routine.

"In addition, Kansas has made great strides during the last few years in building more hospitals and in expanding the facilities of those already established. Scores of communities have built hospitals, and more are in the planning stage. And the results are clearly apparent—Kansans live longer, and they are ill for shorter periods than formerly.

"The splendid record being made in maternal mortality represents only one of the priceless dividends being paid in Kansas through those of the medical profession and through citizens in general who are working together for the benefit of all."

A 93 per cent reduction of deaths of children from acute communicable diseases, and a reduction of infant deaths by more than two-thirds since 1916, are outstanding examples of progress in the health field.

In the face of such outstanding progress made in the reduction of preventable deaths, suffering, and crippling, it appears extremely foolish to advocate such radical, costly, and untried schemes as those for the socialization of medicine. There is little evidence that compulsory health insurance will improve the health of the nation, or that it is necessary to assure adequate medical care to the American people. The rapid growth of voluntary prepaid hospital and medical care programs in Kansas is further evidence that the people can handle such problems without

governmental coercion. Blue Shield, the medical care program, more than doubled its membership in 1948 from 48,000 to 100,000. Blue Cross, the hospital care program, continues rapidly increasing each year.

I am in no way implying that all of our problems in safeguarding the lives and health of Kansas citizens are solved. The leading causes of death, such as heart disease, cancer, vascular diseases, accidents, nephritis, diabetes, and others, certainly present a challenge. The problem of mental illness, which we have already tackled in trying to improve both the physical plants of our state institutions and the medical services that may eventually return many of these unfortunate people to their communities, is one that must receive your understanding and help at the local level.

A problem which is ever looming larger on the horizon is the care of the aged chronically ill persons. One county has already satisfactorily handled this problem by an excellent remodeling job on a large county building, converting it into a chronic disease hospital, meeting all the standards established by the Advisory Hospital Council and licensed by the State Board of Health. Its doors are open to county residents who can pay their way, as well as to those who must rely upon the county for such services. Although in this instance, federal funds from the Hospital Construction Act were not used, they are available for such purposes.

Time will not permit me to dwell longer on many of these challenging problems, which you and I as interested citizens, meeting our individual responsibilities in a democracy, have the privilege of solving in our own way.

It is my hope that from this conference will come state-wide coordination of effort on the part of various health organizations and interested citizens working together to safeguard our natural heritage of good health.

Course for Medical Technicians

A three-day course for medical technicians, under the sponsorship of the Kansas Society of Medical Technologists, will be presented at the University of Kansas Medical Center, January 23-25, 1950. The program has been arranged by Dr. Lee H. Leger, assistant professor of medicine and director of laboratories at the Medical Center.

Publicity material on the course has been sent to hospital superintendents, laboratory directors and members of the medical profession of this area in the hope that all laboratory personnel will be permitted and urged to attend. Developments in laboratory technique make it imperative that technicians learn of new methods and advancements if they are to give maximum service to the medical profession.

The following program will be presented:

Monday, January 23

Some Problems Encountered in Operating a Hospital Blood Program—Sr. Anna Cecilia, Laboratory Supervisor, St. Joseph's Hospital, Kansas City, Missouri.

Bone Marrow Studies—Dr. Sloan J. Wilson and LaVonne Coxsey, University of Kansas Faculty.

The Choice of Methods for the Study of Blood Dyscrasias—Dr. Russell L. Haden, Crozet, Virginia.

Pitfalls of Serologic Tests for Syphilis—Frank Victor, Serologist, Kansas State Board of Health.

Implications of the Accurate Measurement of the Erythrocyte—Dr. Haden.

Tuesday, January 24

Culture Methods in Medical Mycology—Harriett Rouse, University of Kansas Faculty.

Prothrombin Determination — Dr. Wilson and Catherine Bossi, University of Kansas Faculty.

The Stool Examination—Dorothea M. McCain, Technician, Winter VA Hospital, Topeka.

Measurement of Serum Total Base—Dr. F. William Sunderman, University of Texas Postgraduate School of Medicine, Houston.

The Determination of Potassium, Sodium, Calcium, Inorganic Phosphorus and Chloride—William H. Archer, Analytical Chemist, Winfield.

Post-War Parasitology—Mary E. Larson, University of Kansas Faculty.

Pitfalls in the Analysis of Glucose—Dr. Sunderman.

Wednesday, January 25

Liver Function Tests—Dr. Lee H. Leger, University of Kansas Faculty.

The Laboratory Diagnosis of Histoplasmosis—Agnes Hinton, Mycologist, University of Kansas Faculty.

Chemical Concepts of the Cause of Cancer—Dr. Robert E. Stowell, University of Kansas Faculty.

Blood Groups and Rh Factors—Dr. Israel Davidsohn, Chairman, Department of Pathology, Chicago Medical School, Chicago.

The Diagnosis of Virus Diseases of the Central Nervous System—Dr. Herbert A. Wenner, University of Kansas Faculty.

Some Practical Aspects of Laboratory Diagnosis of Virus Disease—Dr. Cora M. Downs, University of Kansas Faculty.

Laboratory Diagnosis of Hemolytic Transfusion Reactions—Dr. Davidsohn.

Registrations may be sent to Extension Program in Medicine, University of Kansas Medical Center, Kansas City 3, Kansas. A fee of \$10 is charged for the course, \$4.00 for any one day.

91st Annual Meeting, Kansas Medical Society, Wichita, Kansas, May 15-18, 1950.

Case Report From the University of Kansas Medical Center Clinical Pathological Conference

Resistant Congestive Heart Failure

Edited by Glen R. Shepherd, M.D., and Mahlon H. Delp, M.D., from recordings of weekly clinical pathological conferences participated in jointly by members of Departments of Pathology, Internal Medicine, and members of Junior and Senior Medical Classes.

O.C.W., a 59-year-old white male, was first seen at K. U. Medical Center December 10, 1948, and died here July 27, 1949.

HPI: When first admitted here December 10, 1948, the patient's chief complaint was shortness of breath. He had first learned of a damaged heart valve in 1915, at an insurance examination. However, he had no symptoms of any sort until about 10 years ago when he first noticed mild dyspnea and was advised at that time to curtail his activities. Symptoms were slight until three years ago when there was an increase in dyspnea on exertion and palpitation. It became severe in June, 1948, when he developed dyspnea at rest, nocturnal dyspnea, exertional precordial distress, and ankle edema. He was given mercurial diuretics and digitalis by a local doctor, with some decrease in his edema. On the first admission here the patient showed mild decompensation, and a loud systolic murmur was heard over the aortic area extending into the neck. The pulse was 88.

The blood pressure varied from 115 to 120 systolic, 90-95 diastolic. Positive laboratory findings on admission were one plus albuminuria, NPN of 45. The x-ray showed marked cardiac enlargement involving all chambers, and feeble pulsation. Improvement occurred on this hospital stay and dismissal occurred on December 29, 1948. It was suggested that he follow a salt free diet and take digitoxin .2 mg. q.i.d., and aminophylline, gr. 3, t.i.d.

Since that time the patient had shown no further improvement and complaints of dyspnea, orthopnea, ankle edema continued. He also complained of considerable nausea and vague epigastric distress. The second admission occurred April 29, 1949.

P.H.: Typhoid fever 1910; malaria 1925; usual childhood diseases; no history of joint pains or rheumatic fever.

F.H.: Non-contributory.

System review: Revealed complaints of marked constipation, heavy sensation in the abdomen, some difficulty starting urinary stream, nocturia one or two times.

Physical examination: Pertinent physical findings as follows: Rather obese white male in moderate respiratory distress, appearing chronically ill. Lung fields resonant with a few rales in both bases.

PMI palpable in fifth interspace anterior axillary line. Soft grade I systolic murmur at the apex, harsh grade III systolic murmur at base, heard best over the aortic area. Heart sounds were distant. Pulse 88, regular, quiet, weak, and small. BP 125/90. Liver was palpable two fingers below costal margin, moderately tender. Mild ascites was present together with three plus pitting edema of both lower extremities and one plus diffuse enlargement of the prostate.

Laboratory examination: Urinalysis on admission showed one plus albumin, pus count 120/ cubic mm. Red blood count 4,620,000; hemoglobin 12.8 gm.; white blood count 6,200; polys. 77; lymphocytes 21; E. 2, serology negative. NPN 32.5; sugar 75; NaCl 430; total protein 6.54; sedimentation rate seven mm. in one hour.

Icteric index 10; serum bilirubin 1.5; cephalin cholesterol negative; thymol turbidity four; cholesterol 210; cholesterol esters 60 per cent; prothrombin time 80 per cent of normal; urine urobilinogen .6 units. X-ray and fluoroscopy of the chest showed a heart far above normal limits in size; hypertrophy primarily in the left ventricle, congestion in the hilar areas and adjacent lung fields. Barium enema showed no organic defects in the colon; there was some irritability. Barium meal showed a normal upper gastro-intestinal tract. EKG showed delayed A-V conduction, depression of ST segment and inversion of T waves in Leads 1 and CR5.

Hospital course: The patient was continued on cardiac regimen including digitoxin .1 mg. daily, mercurial diuretics and a salt free diet. However, he showed a very poor response. Diuresis did not occur at any time throughout his hospital stay. The NPN began to rise reaching the level of 75 on May 21. Because of the patient's urinary symptoms, it was decided to catheterize him and 120 cc. residual was found. A retention catheter was left in place and he was continued on catheter drainage for a period of several weeks. During this time his NPN varied, reaching normal occasionally but never staying below 40 for any period of time. It was the opinion of the urologist that he should have a transurethral prostatectomy, but his general condition remained poor. Moderate edema was constantly present. Paroxysmal dyspnea was persistent. The blood pressure approximated 120/90; and the pulse 90. The fluid intake was never adequate, even with supplementary intravenous fluids. The patient's course was progressively worse. On July 22, NPN

was 83, NaCl 380, and CO₂ 37.4. He developed more edema during the last two weeks of life, generalized anasarca being present immediately prior to death. He lapsed into coma and died July 27, 1949.

Dr. Delp: Are there any pertinent questions in regard to this patient's course or his laboratory findings?

Student: Did the patient have any fever during his hospital course?

Dr. Durkee: He had no fever at any time.

Student: What was the specific gravity of his urine at various times?

Dr. Durkee: 1.010, 1.017, 1.011, 1.010, 1.018, 1.014.

Student: Was the heart enlarged?

Dr. Durkee: The cardiac border extended out to the edge of the axillary line.

Student: What was the blood pressure the last few days of his life?

Dr. Durkee: It was ranging around 110-115/90. The last time it was recorded it was 110/80.

Dr. Delp: You have an EKG on this case, have you not, Dr. Cochrane?

Dr. Cochrane: In the three standard leads of the EKG on this admission, there is considerable left axis deviation and a sharp T wave inversion in lead I. At this time he was not on digitalis. The PR interval is slightly prolonged, around 0.20 to 0.22. The precordial leads findings suggest left ventricular enlargement because of the abnormal degree of left axis deviation and inverted T wave in lead I. The precordial leads further suggest myocardial damage. Subsequent electrocardiograms showed tachycardia and a decrease in amplitude of voltage in the standard and pre-cordial leads. A possible interpretation may be that the patient is going into progressive congestive failure. It is more likely, however, that the patient is accumulating edema and fluid in various portions in the body. This will also reduce the total electromotive force.

Dr. Delp: Dr. Tice, may we have your interpretation of the x-ray films?

Dr. Tice: Our first chest film was taken in December of last year and the heart was fluoroscoped at the same time. It showed a large heart, and our impression was of generalized hypertrophy, primarily of the left ventricle. Pulsation was not forceful. There was evidence of congestion in the hilar area interpreted as a degree of decompensation. We have this next film on April 30. The heart is perhaps a little larger than before. There is more evidence of decompensation. Again, we noticed that the pulsation was not good, not forceful, indicating a failing myocardium. We had a GI examination in May, 1949, and no pathological changes were seen in the stomach or colon.

Dr. Delp: Mr. Friesen, we wish your discussion of the differential diagnosis in the case.

Mr. Friesen (Student): In this case, we have an elderly white man with a chronic disease, quite obviously of the cardiovascular system. This localization of his disease is suggested by the chief complaint, shortness of breath. We find that he had a damaged heart valve in 1915, seemingly with no great symptoms for a number of years. Believing this patient had an aortic stenosis we suggest the likely etiology to have been rheumatic fever, or rheumatic heart disease. Other causes are arteriosclerosis and congenital lesions. Syphilis as a cause is rare.

The edema was quite marked in this case, as you would expect in chronic passive congestion. Edema is most frequently caused either by cardiac failure or by renal disease. Some of the causes of edema could be high venous pressure, a slower rate of blood flow, an increased volume of circulatory blood, lowering of colloid or osmotic pressure. In congestive failure, there is increased blood volume and a slower rate of blood flow. Also, you would have to consider the causes of this nitrogen retention. Some of the causes are renal disease, or benign prostatic hypertrophy. One should also consider the fact that this man has been on a low salt diet for a long period of time and he had mercurial diuretics, which could cause a protein depletion, restlessness and high NPN.

I think that terminally this man did have a mild uremia, probably not great enough to be considered the primary cause of death. I think the cause of death was more likely myocardial failure. He probably had considerable fibrosis in the myocardium. Aortic valvular disease can produce coronary insufficiency which would cause a damaged myocardium. The EKG did show that he had a lowered EMF, which would be consistent with that. I think, this man died of myocardial failure, probably with moderate uremia.

Dr. Delp: What is your primary diagnosis?

Mr. Friesen: I think he had an aortic stenosis, probably rheumatic in origin.

Dr. Delp: The protocol states that this man did not respond to the usual treatment for congestive failure. And, we gather from the protocol that this was the administration of digitoxin and mercurial diuretics and salt restriction. Why did he not respond?

Mr. Friesen: Well, that is a question I asked myself, too. I think the fact that he had edema, slow circulation, and kidney damage could account for the ineffectiveness of the diuretic.

Dr. Delp: All right, thank you. Mr. McCray, could you add anything to Friesen's comments in re-

gard to the lack of response of this patient to the mercurial treatment?

Mr. McCray (Student): I think a little more could be said on this syndrome of salt depletion. There is an article in the *AMA Journal* of April 23, which reviewed seven cases. The first two cases that they reviewed had been on low salt or salt-free diet with massive doses of mercurial diuretics and increased fluid intake. They went into congestive failure and died with chloride of 306 to 311. In both cases the NPN was elevated. The first one was 65 and the second case was 88. In the third case, the chloride went to 284. Upon occurrence of hyponatremia, they were given isotonic saline solutions, and the patients lost their symptoms of uremia. Some of the postulations for the cause of this syndrome were derangement of blood concentration of blood electrolytes, auto-intoxication, and acidosis, which further impaired the cardiac function and which were not reparable by salt restriction and salt diuresis.

Dr. Delp: Would you be willing to state that this patient probably died as a result of hyponatremia?

Mr. McCray: No, I would not be willing to state it. But, there is that possibility.

Dr. Delp: Dr. Major, I know that you saw this patient over quite a period of time. We would like to have your discussion in regard to the primary diagnosis and any other comments you wish to make.

Dr. Major: There are two or three points about this patient which are very instructive. I would like to call your attention to them. The first of these is that this patient did not at any time have the slow pulse which is supposed to be so characteristic of aortic stenosis. Dr. Delp is probably going to ask me why these patients have a slow pulse. That question, as you know, has been debated ever since it was found that a slow pulse was a characteristic feature in many cases of aortic stenosis.

You all probably know that the classical explanation is that it is due to a stimulation of the vagus reflex through the aortic arch. That being the case—that the slow pulse is the classical finding in aortic stenosis—I would like to ask Dr. Delp why so many of them, including this one, do not have a slow pulse. I don't know what a review of all of our cases would show, but I know that we have had a great many who also did not have a slow pulse. This patient did have, however, the pulse that rises slowly and goes down slowly. He had the plateau type of pulse, but he did not have the slow pulse.

I was never able to convince myself that this patient had a systolic thrill. There is no notation anywhere in the records of anyone having felt a systolic thrill in this patient. And yet, he had an intense systolic murmur over the aortic area. This brings out the point that the diagnosis in cases of aortic sten-

osis is often missed because some insist upon the presence of a thrill before making the diagnosis of aortic stenosis. Osler used to point that out. The authors of the article in *Medicine* make the interesting observation that, before they began their study, their staff missed a great many cases of aortic stenosis because they were too insistent upon the classical picture. But I think that that has been our experience, too, that these patients are often missed because too rigid a diagnostic criteria is a standard.

Why do these patients often die suddenly? That is supposed to be a characteristic feature of aortic stenosis. I have seen several patients with aortic stenosis who, in apparently perfectly normal condition, died very suddenly. That feature has been noted ever since aortic stenosis was first recognized. It has been suggested, of course, that they may for some reason have a sudden ventricular fibrillation, which may be the case. It is a very convenient diagnosis to make, particularly if there is no electrocardiograph around and it can't be disproved. It has also been suggested that these patients die because of involvement of the carotid sinus. However, a great many of these patients, including this patient, have long lingering illness.

Dr. Delp: Do you think this patient had aortic insufficiency?

Dr. Major: I don't think he did. I think that it was probably a pure aortic stenosis.

Dr. Delp: Do you accept the statement that with aortic stenosis there is always an insufficiency?

Dr. Major: Not always, but I think there usually is.

Dr. Delp: It does seem rather clear that this patient had none of the usual findings of aortic insufficiency in either the quality of his pulse or his blood pressure.

Dr. Major: That brings up a very interesting point to me regarding the etiology of this patient's aortic stenosis. If we had just seen the patient for the first time, of course, some one would have said his lesion was arteriosclerotic in origin. But, this patient had had aortic stenosis for 33-34 years. Thirty-three or 34 years ago, he was 26. You don't usually expect arteriosclerosis to appear at that age. I am inclined to think that this is a rheumatic aortic stenosis, even though there is no history of rheumatic fever.

Dr. Delp: Would you make an estimate, Dr. Major, of how many patients with aortic stenosis you think have rheumatic heart disease as an etiological background.

Dr. Major: I think that even the pathologists are a bit uncertain often as to whether the condition, even though it be arteriosclerotic, wasn't engrafted upon rheumatic lesions. Aside from possible congenital causes, I would be under the impression

that a high percentage of them are rheumatic in origin.

Dr. Delp: Thank you, Dr. Major. Dr. Durkee, there are a couple of questions before we let the pathologists take over. You said that these patients frequently have anginal pain or pain similar to angina pectoris. Do you have any explanation for that?

Dr. Durkee: I think it is probably due to the fact that the aortic valve is stenotic, the coronary blood flow is poor and, as a result coronary insufficiency is present. I don't think it necessarily due to any arteriosclerotic disease of the coronary vessels. In many of these calcified valves, the blood that flows through them is rather scanty and the blood pressure is certainly not great. This lowers the blood flow to the coronary vessels.

Report of Pathological Changes

Dr. Chaney: At autopsy, there was marked dependent edema and interstitial edema. Ascites was approximately 800 cc. of amber colored fluid. There was bilateral pleural effusion of 1000 cc. on the right, 1500 cc. on the left. The lungs were congested and moderately edematous. The heart was hypertrophied and moderately dilated. There was a nodular calcification of the aortic valve with a marked stenosis precluding admission of one finger. The aortic bulb showed no sclerosis. There was noted myocardial fibrosis and a right apical and ventricular thrombi. Chronic passive congestion of the liver was marked. The kidneys were small, the capsules granular, and the cut section congested.

Dr. Boley: There is little to add as far as the microscopic picture is concerned. However, congestion is seen in the liver and in the lungs. Heart failure cells are fairly numerous in the alveoli, other alveoli contain hemorrhage and edema fluid. Most pronounced, however, is the thickening of the alveolar wall. Another interesting feature that goes back for quite a number of years is a healed infarct of the spleen, supporting the supposition of previous valvulitis. This patient had a calcific aortic stenosis, with adhesions between the cusps. So, in keeping with the history, we have interpreted this as a rheumatic valvulitis upon which the calcific aortic stenosis was superimposed.

Answering one of the questions, 98 per cent of these calcific aortic stenoses are on a rheumatic basis, according to Karsner. There are pathologists who would not agree with a figure this high. The patient died primarily of his myocardial failure, as indicated by the gross findings of ascites and congestion in the viscera.

Dr. Delp: Dr. Wahl?

Dr. Wahl: One of the most interesting findings we have in this heart is the marked stenosis. This

is quite a common lesion. There has been a great deal of controversy among the pathologists as to the origin of these stenoses, not so much the relationship to rheumatic fever but regarding the frequency with which rheumatic fever causes this disease. Dr. Karsner in his monograph emphasized that 98 per cent or more of the cases are due to rheumatic fever. The pathologist at Leland Stanford University arrived at a somewhat different conclusion. He admits that most of these cases are due to rheumatic fever, but his percentage is about 50-60 per cent.

In this particular case, the first 3-4-5 cm. of the ascending aortic arch looked like the aorta of a young adult. It was only when we reached the arch of the aorta and the descending aorta that extensive atherosclerosis was found.

General Discussion

Dr. Delp: I have been very much interested in the work of Dr. Hellwig of St. Francis in Wichita. He has stated that one of the factors in the pathogenesis of atherosclerotic changes in the heart and in the aorta had to do with the tumultuous flow of blood, the activity in the wall of the aorta, etc. He stated that the atherosclerotic changes are invariably greater on the posterior wall of the aorta, where the aorta is flattened against the vertebral column. He likened that to the flocculation and clumping of cholesterol substances hastened by mechanical agitation as occurs in doing serologic determination in the laboratory. This is possibly a factor. This theorizing might be carried a bit further. It might be suggested that the patient with aortic stenosis has an absence of atherosclerosis in the aorta, simply because he does have an aortic stenosis and consequently the pressure, turbulence, and agitation of blood in the aorta has been reduced by the semi-closed valve.

There are some other clinical features in this case which I do not wish to ignore. First of all, I know that Dr. Tice has been interested in diagnostic features in aortic stenosis. And, I would like to have him make some comments about the roentgenologist's contribution in the diagnosis.

Dr. Tice: We did not see the calcification in this aortic valve. I think it was because we did not look for it. But, 20 years ago, Dr. Sossman, prominent x-ray man of the time, was asked the question by the pathologists why he could not see calcification in aortic valves. His answer was the same as mine, that he had not looked for it. So, he and one of his residents started looking for calcification. They were able for the first time to demonstrate calcified valves. That was about 1929-30. Knowing that, we have watched for them but not too carefully.

If the history indicates that there might be a calcified valve, we spend more time looking for it. Sometimes we can see it. I think that in one or two

cases the calcification was so great that we picked it up on the first film without being warned ahead of time. I don't think that you can see calcification on a routine x-ray chest film. I think that you have to see it by fluoroscope, that your eyes must be very well accommodated, and that your screen must be toned down to a small area. Even then, you can't always pick up calcification. We have five films showing calcified valves.

Dr. Delp: Dr. Bolinger, there are still some features of this case about which I am not satisfied. Why did he not respond to treatment for congestive failure? Did this man have a hyponatremia? If he had, is that the reason he did not respond to the administration of mercurhydrin?

Dr. Bolinger: All of the factors which have been brought out by McCray have been recognized only the last few years. Actually the effect on renal function of decreasing the salt or decreasing the sodium in the blood has not been considered very much. From the articles, particularly in the British literature, it has been pointed out that, by restricting salt on a normal person and allowing as much fluid as they wish, actually a deterioration in renal function appears to the extent that azotemia develops. This might be classified as a prerenal azotemia. In other words, no obvious abnormality was in the kidney. That idea has been challenged by other workers, who claim the effect could not be produced unless at least some damage to the kidney was present.

As we think of the factors in diuresis and the factors in fluid retention in heart disease, it has been customary in the past to ignore the kidney. However, most recent works have shown that the glomerular and the tubular functions are both important in the production of adequate diuresis. On one hand, the glomerular function is dependent largely upon two main factors: (1) the circulating blood volume and (2) the cardiac output. Glomerular function suffers when there is even a slight de-

crease in cardiac output. The kidney seems to be preferentially excluded from the benefits of cardiac output in even slight heart damage. On the other hand, by tubular function, even though glomerular function be decreased, the kidney continues to reabsorb salt and water.

The question has also been raised as to why the kidney should do that in the presence of azotemia, even though it is filtering a certain amount of fluid. Endocrine factors have been demonstrated and are being demonstrated as being most important in that respect. It has been shown that there is increased adrenal cortical activity causing sodium to be reabsorbed by the tubules. There is evidence of increased posterior pituitary activity causing water to be reabsorbed.

Those factors probably stem from the fact the body very jealously guards its function of maintaining the tonicity of the electrolytes even at the expense of fluid volume. Most of the means of diuresis, at least the ones we used in this case, are dependent upon altering the tubular reabsorption. In other words, if we restrict sodium in a patient, we expect that the endocrine factors of the body will so alter tubular reabsorption that it will have to excrete water in order to maintain the tonicity of the body fluids. We are depending on a normal tubular function being present. On the other hand, if we force fluids, we are largely doing the same thing. We are disturbing the tonicity and are expecting the normal kidney and endocrine functions to make the adjust-

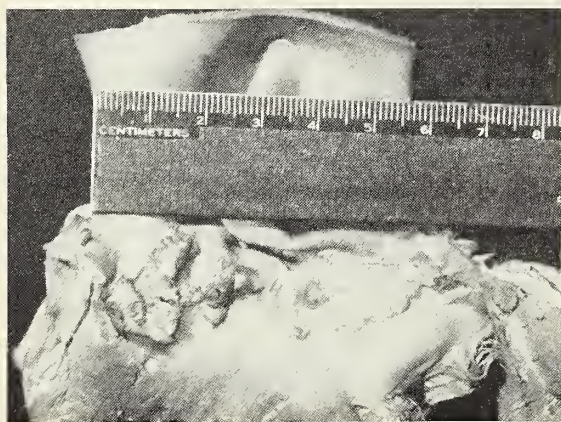


Figure 1. Calcified aortic valve.

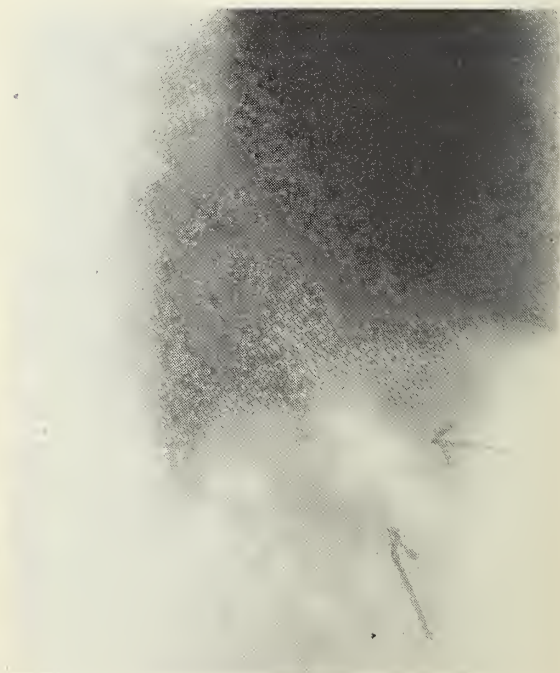


Figure 2. Roentgenogram of typical calcified aortic valve. This is not the case under discussion.

ment in tonicity and, in doing so, to secrete a certain amount of water.

In this case, our methods to obtain tubular alteration were unsuccessful. The low sodium chloride that is shown here and the high NPN fit in very well with the picture of a prerenal azotemia. A prerenal azotemia is dependent largely upon reduced glomerular infiltration. In other words, although this patient's circulating blood volume was probably increased due to his heart failure, it was probably not increased enough to maintain adequate glomerular filtration.

Probably the most important factor is his reduced cardiac output, reduced even more than it would be in the average case of heart failure because he had an aortic stenosis. Therefore, it is questionable that giving this man hypertonic saline would have helped him. It might have pushed him over the hump to the extent that glomerular filtration would have been resumed, and then the factors of tubular reabsorption could be used to produce diuresis, such as mercurhydrin and the forcing of fluids. Those two things cannot occur, however, unless we have normal glomerular filtration, which is dependent upon blood volume and cardiac action. I think increased sodium intake should have been tried on this man, but I have my doubts that it would have been effective.

Dr. Delp: You mentioned hypertonic salt solution. Why would you have given him hypertonic salt solution, rather than hypotonic or normal saline, for instance?

Dr. Bolinger: Well, actually the tonicity of this man's body fluids is reduced right now. I think hypertonic salt should be used probably because it would tend to draw more fluid into circulation and increase the circulating volume.

Dr. Delp: Do you have any ideas or suggestions as to how such patients might be detected during salt restriction in the treatment of congestive failure? Could you think of any routine laboratory observations that we might use on them?

Dr. Bolinger: I think the blood chloride is not a satisfactory test because a considerable deterioration can occur in renal function and still the tonicity be maintained. Therefore, I don't believe that would be of much help. I think the clinical NPN is probably a more important test because it reflects the glomerular function and the defect actually is in glomerular function. Also, the clinical refusal of the patient to respond to mercurial diuretics should be watched very closely. If he does not respond, it means something is wrong.

Summary

In this case the clinicians were presented with a

resistant congestive heart failure in which the azotemia, low blood sodium chloride, and failure to respond to mercurial diuretics suggest over restriction in salt intake. The case further illustrates a classical example of pure aortic stenosis in which such features as the slow pulse, aortic systolic thrill are absent but the rheumatic etiology is clear by the history even at the age of 59 years.

Chicago Clinical Conference

The 1950 clinical conference of the Chicago Medical Society will be held February 28, March 1, 2, and 3, 1950, with headquarters at the Palmer House. Scientific lectures will be presented by some of the nation's foremost medical authorities and educators, and there will be scientific and technical exhibits. Color television of actual surgical procedures will be shown, and entertainment features will be provided.

Reservations may be made by writing direct to the Palmer House.

Addition to Cook County Staff

The Cook County Graduate School of Medicine, Chicago, announces the addition to its staff of Mr. John W. Neal, who will serve as comptroller and assistant registrar. The son of the late Dr. John R. Neal who was dean of the school, Mr. Neal is a graduate of Northwestern University and has been engaged in the practice of law in Chicago for the past 11 years. He is general counsel for the Illinois State Medical Society and is executive secretary of its Committee on Medical Service and Public Relations.

Cytologic Diagnosis of Cancer

Courses in exfoliative cytology for the diagnosis of cancer by the smear technique will be available soon at the University of Colorado School of Medicine for pathologists and other qualified physicians. Two types of courses will be offered. One will meet one afternoon each week for 12 weeks, and the other will meet daily for a period of two weeks. The laboratory of exfoliative cytology is now open to individual physicians for study by appointment.

Two types of courses are now being offered for technicians, a two weeks course in staining techniques only and a four months course in the techniques of staining and screening.

Physicians or technicians interested in enrolling may write Walter T. Wickle, M.D., Director of Laboratory of Exfoliative Cytology, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver 7, Colorado.

ACTIVITIES OF MEMBERS

Dr. Frederick P. Wolff, formerly of Kansas City, has opened an office for the practice of internal medicine in Pratt.

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Dr. Thomas P. Butcher, Emporia, was speaker at a recent meeting of Pi Gamma Mu, honorary social science fraternity at Emporia State College. He discussed socialized medicine and the reasons for the medical profession's opposition to such plans.

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Dr. J. W. Kelley, 82-year old physician at Louisville, recently observed the 50th anniversary of his start in the practice of medicine.

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Dr. A. C. Baird, Parsons, recently completed a short postgraduate course in general surgery and fractures at the Harvard School of Medicine.

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Dr. D. C. Chaffee, Abilene, announces that his brother, Dr. Lynn Chaffee, formerly with the Veterans' Administration and the U. S. Public Health Service, is now associated with him in practice.

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Dr. A. C. Dingus, Yates Center, has been appointed health officer of Woodson County.

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Dr. C. V. Conwell, Dr. G. Q. Street and Dr. C. J. Kurth, Wichita, announce that a clinical psychologist, Paul G. Murphy, Ph. D., is now associated in practice with them.

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Dr. C. H. Jones, Galena, was honored on his 84th birthday in October when 100 members of the Galena Elks Club entertained at a dinner and recognition service for him.

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Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, was named vice president of the American Association of Medical Colleges at a meeting held in Colorado Springs last month.

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Dr. Edward A. Stapleton, Jr., formerly of Wetmore, has opened an office for general practice in Overbrook.

* * *

Dr. James H. Holt, Wichita, plans to take postgraduate work in surgery at the Lahey Clinic, Boston.

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Dr. Robert E. Stowell, chairman of the Department of Oncology at the University of Kansas School of Medicine, spoke on "Cancer Research" before Sigma Xi, national honorary scientific research society, at Lawrence last month.

Dr. Charles F. Haughey, Tribune, has been appointed coroner of Greeley County.

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Dr. and Mrs. E. A. Evans, Wellington, held open house at their home recently in celebration of the doctor's completion of 48 years of active practice.

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Dr. Stanley Friesen, formerly of Wichita, has been appointed assistant professor of surgery at the University of Kansas School of Medicine.

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Dr. and Mrs. George B. Kierulff were guests of honor at a community reception held at Melvern recently, in recognition of his 41 years of practice there.

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Dr. W. O. Nelson, Lawrence, spoke at a recent meeting at the First Baptist Church in Lawrence recently and told of a medical mission in Labrador which he visited last summer.

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Dr. J. Grant Lee, a graduate of the University of Kansas who served his internship at the University of Iowa, has announced the opening of an office in Kansas City. He is specializing in obstetrics and gynecology.

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Dr. Fred E. Patrick, Jr., El Dorado, is moving to Mission and after the first of the year will establish offices in Kansas City, Missouri. He will then divide his time between Kansas City and El Dorado.

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Dr. Ray Busenbark, Kansas City, has been named by Governor Frank Carlson to serve as coroner of Wyandotte County to complete the unexpired term of the late Dr. C. W. McLaughlin.

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Dr. N. C. Siebert, Wichita, recently took a postgraduate course in obstetrics at Harvard University School of Medicine.

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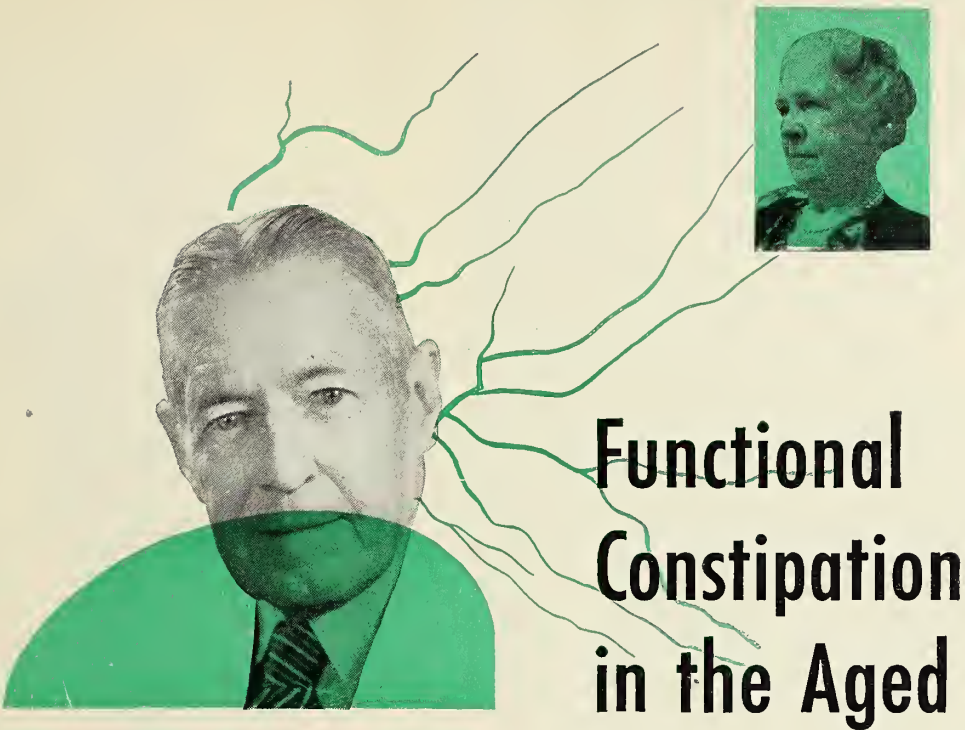
The American College of Surgeons announces that the following Kansas physicians became fellows at the 1949 meetings: Dr. Wayne C. Bartlett, Dr. Harold F. O'Donnell and Dr. Larry E. VinZant, Wichita; Dr. Frederick L. Ford and Dr. Charles S. Joss, Topeka; Dr. Paul W. Schafer and Dr. Chester Lee Young, Kansas City; Dr. Raymond J. Beal, Fredonia; Dr. William E. Grove, Newton; Dr. Richard H. Weddle, Winfield.

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Dr. M. V. Stanley, Baxter Springs, has moved to Pryor, Oklahoma, and has opened an office there.

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Dr. Donald E. Bux, who has been associated in practice with Dr. G. B. Athy, Columbus, for the



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*Werner, A. A.: The Climacteric in Women and Men, Postgrad. Med. 4:102 (Aug.) 1948.



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RESEARCH IN THE SERVICE OF MEDICINE

SEARLE

past three years, has announced that he will leave soon for a new practice in California.

* * *

Dr. Franklin D. Murphy, Kansas City, was guest speaker at a meeting in Paola last month at which the Lions Club entertained the teachers of Paola and members of the local board of education.

* * *

Dr. Thomas G. Orr, of the University of Kansas School of Medicine, was elected president of the Southwestern Surgical Congress at a recent meeting.

Dr. J. W. Cheney, who recently celebrated his 50th anniversary as an eye, ear, nose and throat specialist in Wichita, was honored by the Academy of Ophthalmology and Otolaryngology at a recent banquet in Chicago. He had been a member of the organization for more than 30 years.

* * *

Dr. M. E. Hyde, Ottawa, spoke on "The Increasing Problem of Mental Health" at a recent meeting of the Ottawa chapter of Beta Gamma.

DEATH NOTICES

CLAUDIUS ESTYL BANDY, M.D.

Dr. C. E. Bandy, 72, an active member of the Ford County Medical Society, died August 27. He was graduated from the Hospital College of Medicine, Louisville, in 1905, and came to Kansas in 1911, first practicing at Kingsdown and later at Bucklin, where he was practicing at the time of his death.

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VAN CURTIS VANVOORHIS, M.D.

Dr. V. C. VanVoorhis, 82, who had practiced in Robinson since he received his Kansas license in 1901, died at Horton October 1. He was graduated from the Central Medical College of St. Joseph in 1898 and served his internship in St. Joseph. Dr. VanVoorhis was active in civic affairs in Robinson and had served as mayor and a member of the city council. He was an honorary member of the Brown County Society.

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JOSEPH F. IMPERATRICE, M.D.

Dr. J. F. Imperatrice, 47, a member of the staff of the Larned State Hospital during the past two years, died October 4. He was graduated from the Long Island College of Medicine in 1926. He was practicing in Fulton, Missouri, at the time of World War II and left Fulton to serve with the Army medical corps. He joined the staff of the Kansas hospital upon his release from the Army and became an active member of the Pawnee County Society.

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CHARLES HALL DIXON, M.D.

Dr. C. H. Dixon, 67, who practiced in Wichita, specializing in internal medicine, died at his home November 2. He was an active member of the Sedgwick County Medical Society. A graduate of the Washington University School of Medicine in 1907, he began his practice in Wichita and continued

until he became ill three months ago.

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ALEXANDER C. FLACK, M.D.

Dr. A. C. Flack, 90, an honorary member of the Wilson County Society and a former president of that group, died November 14. He received his education at the Medical College of Ohio, graduating in 1885, and came to Kansas in 1901. He opened his office in Fredonia and continued to practice there until his retirement in 1947.

* * *

HERBERT ANDREW BROWNE, M.D.

Dr. H. A. Browne, 71, who had practiced in Galena since 1901, died at a Joplin hospital November 20. He was a graduate of the Kansas City Homeopathic Medical College in 1899. During World War I he served in the Army medical corps. Dr. Browne was active in civic affairs and had served as mayor of Galena for two terms. He was a member of the Cherokee County Society.

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RINHART F. KIPPENBERGER, M.D.

Dr. R. F. Kippenberger, 51, physician at Scott City, died November 21. He was an active member of the Finney County Society. Dr. Kippenberger was graduated from the University of Oklahoma School of Medicine in 1927 and secured his Kansas license the following year, practicing in Scott City since that time.

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EARLE RUBEN FURGASON, M.D.

Dr. E. R. Furgason, 45, an active member of the Montgomery County Society, died November 1 at his home in Independence. He was graduated from the University of Kansas School of Medicine in 1920 and began practice in Chanute, moving to Independence in 1924. He continued to practice there until his death, specializing in surgery and radiology.



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THE KANSAS PRESS LOOKS AT MEDICINE

It's Not Insurance—It's Another Tax

While the Department of Justice is bringing anti-trust suits in a wholesale manner against many concerns, which for generations have been under strict supervision and regulation, it has been disclosed that it now has FBI operators working on an investigation of the American Medical Association with the idea of bringing an action against that organization. It is an example of political skull-duggery that has seldom been equalled, and is an example of tactics which have been used for ages by those who are fanatics on the question of unlimited socialistic control.

The idea that an organization of some 150,000 physicians could be a monopoly or in any other way violate the rights of a free people is, of course, preposterous. Such a charge could as reasonably be made against the Masons, the Odd Fellows, a religious denomination, or any other voluntary fraternal organization.

There is one reason, and only one, back of this move, and that is to try to intimidate the medical profession and the AMA because of its opposition to President Truman's determination to put the practice of medicine under government control, which some have referred to as "statism." President Truman sneeringly remarks that he doesn't know what "statism" is, and from the way in which he is trying to force it on the country, it might be charitable to say he doesn't know, when he refers to it as health insurance.

The very term of compulsory health insurance is a contradiction, for insurance is a free act in which man pays certain sums for the benefits or protection he receives, based on the risks involved. If he has to pay it to the government, whether he needs it or not, it is a tax. The proposed payroll deduction is another tax because the benefits have no relation whatever to the amount of payment made. A man with a salary of \$1,000 and a family of five will pay perhaps \$40 a year for services for his entire family, while a man with \$3,000 a year and unmarried will pay perhaps \$120 a year for services for himself only. It is strictly an income tax and not an insurance.

The proponents of this plan state that it is not compulsory; that a person may go to any doctor he desires. This is one of those half truths that is more dangerous than a lie. Such a person may go to any doctor, but he has to pay for it himself as well as pay the government tax. The same thing would be true of some 30 million people who belong to the Blue Cross, the Blue Shield and

numerous other legitimate and successful mutual insurance groups. They could pay their dues into these organizations, but they would also have to pay the tax to the government. One of the first things socialized medicine would do would be to break up these voluntary organizations.

There might be some argument for socialized medicine if these prepaid, voluntary medical care plans had failed. But they have grown with remarkable rapidity in late years. The extent of their services offered has steadily been enlarged. The cost is low, the worker's entire family is covered, and there is no money wasted in supporting another bureau at Washington. On the other hand, a compulsory health tax leaves the individual no choice. He is compelled by law to accept the government medicine because he cannot afford to pay also to the existing voluntary systems for prepaid medical care.

Whenever demagogues propose Utopia, you will always find that it involves the surrender of one or more personal liberties. Guaranteed security must have a police state to make it work, and nobody knows it better than those who are trying to foist this socialized medicine on the country. In fact, that is the reason they are for it. They want more government control and another bureau at Washington.—F.J.C., *Kingman Journal*.

* * *

Without Federal Help

The Kansas medical program is the subject of a lengthy article in a current national magazine. The details are familiar to Kansans, how the rural doctor shortage is being overcome through cooperation of the towns which need doctors, the state university medical school and others.

The success of the Kansas program has attracted attention of other states with similar problems. It is bringing inquiry, too, from individuals interested in various phases of the projected national health program.

Kansas is taking the lead in solving an important problem. Better than that it is doing the job without running to Washington for assistance. That perhaps is the most refreshing thing about the whole business. The state is using its own resources, its own ingenuity in getting a job done.

More by design than by accident, states and individuals alike have become more and more dependent upon action of the federal government in Washington. The vast bureaucracy that has been created there encourages such dependency, because it only contributes in turn to the further growth of federal power and authority.

It may be a shock to Washington that a serious medical problem can be solved, or progress made in that direction, without resort to appeals for federal

50 and 2

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aid. It may be a shock, too, for a lot of people outside of Washington who have become so accustomed to looking to Uncle Sam for succor that they now accept the procedure as second nature.

The Kansas medical story furnishes an example of what can be done and can stand emulation in other fields.—*Parsons Sun*.

ABSTRACTS FROM CURRENT LITERATURE

Diagnosis of Rheumatic Fever

The Differential Diagnosis of Rheumatic Fever and Infections of the Central Nervous System. By Henry D. Brainerd and Maurice Sokolow, *Jnl. Ped.*, 34:2, 204-212, Feb., 1949.

Surprisingly often rheumatic fever is diagnosed erroneously as an infection of the central nervous system, and less frequently the reverse error is made. The authors report several cases where rheumatic fever was first diagnosed as meningitis or poliomyelitis and two cases where meningitis was misdiagnosed as rheumatic fever. No previous history of rheumatic fever was admitted.

In most instances, the appearance of frank joint involvement will promptly exclude the diagnosis of poliomyelitis. Tenderness, swelling, and pain in the joints on motion should be sought daily. Before joint manifestations are well marked, spasm of muscles in the area may mimic that which is commonly seen in poliomyelitis. Similarly, unwillingness to move an extremity because of pain may be mistaken for true muscular weakness, especially in young children. In association with the muscular weakness of poliomyelitis, depression or absence of deep reflexes invariably occurs. Depression of the deep reflexes in an extremity involved by rheumatic fever does not ordinarily occur.

The examination of the spinal fluid will settle the diagnostic doubt in most cases. Myocarditis, especially as evidenced by abnormalities of the electrocardiogram, is of common occurrence in rheumatic fever, but occasionally may occur in either poliomyelitis or meningitis. Sedimentation rate in poliomyelitis is usually normal or only slightly elevated, but generally quite elevated in rheumatic fever. Salicylates usually relieve the pain in rheumatic fever but usually have little effect on that of poliomyelitis.

Stiffness of the neck or back, a positive Kernig's sign, and muscle spasm may occur at the onset of rheumatic fever.

The total clinical picture with repeated observations usually permits an accurate diagnosis to be made in doubtful cases.—*D.R.D.*

Diabetic Coma

Serum Potassium Levels in Diabetic Coma. By Richard H. Sinden, James L. Tullis, Howard F. Root, *New Eng. Jnl. Med.*, 240:13, 502-505, Mar. 31, 1949.

Normal serum potassium is 4.1 to 5.6 milliequivalents per litre.

In diabetic acidosis treated with insulin and glucose in the first six to eight hours hypopotassemia may constitute a threat to life. This is contrasted to the high serum potassium levels, equally dangerous, seen in shock, cardiac or renal failure and anuria. In acidosis, particularly diabetic, there is a loss of potassium in the urine—all the result of a disturbance in cellular permeability during diabetic coma. Serum potassium may be elevated though cellular and total body potassium at the same time is low.

The authors present serum potassium and other data on six cases of diabetic coma treated with insulin but without glucose. It is demonstrated that the period of early recovery from coma may be dangerous from a chemical standpoint. To avoid this danger little or no glucose should be administered during the first few hours of treatment for coma since it increases the potassium shift.

The diagnosis of hypopotassemia (hypokalemia) is best established by serum potassium levels. Muscular weakness or flaccid paralysis, occasionally a fish mouth facial expression and EKG changes (low voltage QRS, lowering or inversion of T and occasional ST depression and prolonged QRS) have been reported in patients with low serum potassium. In hyperkalemia the EKG may show no P wave and high peaked T waves.

The authors warn that potassium (as potassium chloride, 100 c.c. of two per cent solution intravenously or orally) should be given slowly to avoid transient dangerously high (up to 12 milliequivalents) levels and emphasize that enemas and gastric lavage early in the treatment are used, so patients can be fed orange juice and oatmeal which contain much potassium and thus avoid the use of potassium salts.—*P.W.M.*

* * *

Caronamide in Subacute Bacterial Endocarditis

Caronamide as an Adjuvant to Penicillin in the Treatment of Subacute Bacterial Endocarditis. By S. H. Eisman, C. F. Kay, R. F. Morris, W. P. Boger, *Am. Jnl. Med. Sci.*, 217:1, 62-70, Jan., 1949.

Statement is made that in subacute bacterial endocarditis, the causative organisms are resistant to penicillin in ordinary therapeutic dosage. Higher plasma concentrations of penicillin may be obtained by the administration of drugs which inhibit renal tubular excretion. Such agents include benzoic acid or sodium benzoate, diodrast, para-aminohippuric acid, and caronamide. Of these caronamide can be

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given orally and is most practicable. Toxicologic effects in animals have been found to be minimal.

Administration of caronamide resulted in significant increase in concentration of penicillin. At two and three hours after administration of crystalline penicillin and caronamide, the level of penicillin was increased three to 10 times.

Doses of 3.0 to 4.0 grams of caronamide every three hours were necessary to produce caronamide levels above 20 mg. per 100 c.c. Such a level appeared necessary to produce optimal penicillin plasma levels.

Mild anorexia was occasionally noted during the first few days of caronamide therapy. In two patients nausea and vomiting prevented further use of the drug.

Abnormalities of renal excretory function were noted during caronamide therapy. Two patients showed slight rise of blood urea nitrogen. PSP balance was regularly reduced during periods of effective caronamide therapy. Slight to moderate albuminuria was frequently reported.

No evidence of hematologic disturbance appeared.

Two patients died. One showed no evidence of renal damage at autopsy. The other showed an acute diffuse glomerulonephritis. Caronamide was suspected as a possible cause, but she had likewise had a severe transfusion reaction about two weeks before.

It is noted that the addition of acid to urine containing caronamide may give an apparent false positive test for albumin.

The recommended therapeutic dose is 3.0 grams every three hours.—E.J.R.

* * *

The Cervical Stump

The Cervical Stump, an Analysis of 123 Cases. By J. B. Crawford, C. G. Collins and J. C. Weed, S.G.O., 88:4, 465-472, April, 1949.

The authors have seen a great number of patients complaining of symptoms referable to the cervical stump which were not relieved by previous pelvic operations. In this article they analyze 123 patients in whom the cervical stump was removed, and discuss the various symptoms produced by diseased cervixes.

The commonest symptom was pelvic pain (55.6 per cent) which was described as lower abdominal pain involving either one or both sides of the iliac fossa, usually chronic in nature, rather ill-defined, often worse just prior to the onset of menstruation, and aggravated by walking about or lifting heavy objects. One of the commonest causes of this type of pain is a chronically diseased cervix. If the application of tincture of iodine to the cervix or moving the cervix to the side opposite from the

pain provokes the pain of which the patient complains, it is probably cervical in origin.

Deepseated dyspareunia is frequently caused by a diseased cervix. The pain is severe and described "as if something sore is being struck."

Low backache occurred in 28 per cent. Backache originating from a diseased cervix is usually localized in the sacral and coccygeal areas, and is aggravated just before or during the menstrual flow, by lifting or by exertion. It is usually relieved by reclining. If, when the cervix is lifted anteriorly, the backache is reproduced the cervix may be blamed.

Discomfort in the urinary tract, usually dysuria and frequency, was a complaint in 32.5 per cent of cases.

In discussing treatment, the authors state that a diseased cervix should always be suspected in any woman with pelvic pain, dyspareunia, contact bleeding, backache, leukorrhea and urinary difficulties. If hysterectomy is indicated for associated pelvic pathologic conditions, the uterus should be removed in toto whenever this procedure is technically possible. If the cervix is not removed at the time of hysterectomy, it should be removed by the vaginal route as soon as the patient's general condition permits. Symptomatic prolapse and cases of long standing chronic infections of the stump should be treated by complete removal of the stump. Malignancy is treated by radiation.—F.W.F.

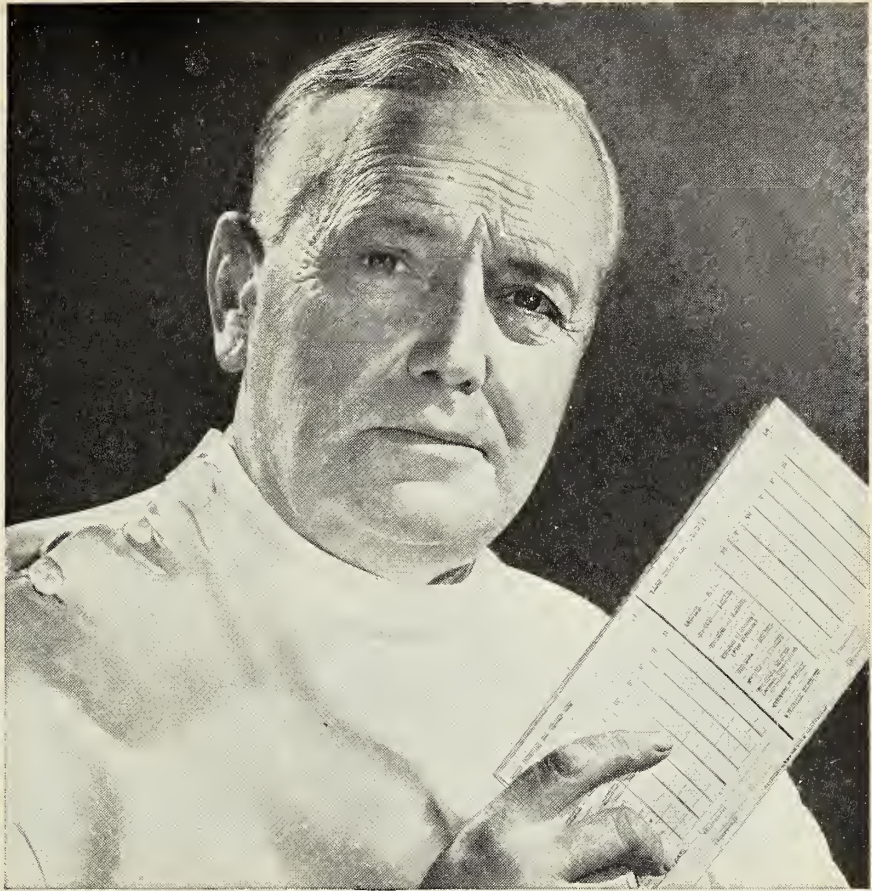
* * *

Diverticula of the Duodenum

Diverticula of the Third Portion of the Duodenum. By R. G. Spann, L. Singmaster and Gilson Colby Engel, Am. Jnl. Surg., 392-395, March, 1949.

Ten cases of diverticula of the duodenum appear in the records of the Lankenau Hospital since 1937. Nine of these were in the second portion and the one reported in the present instance was the only one found in the third portion of the duodenum. The patient complained of indigestion, nausea and vomiting and epigastric pain which was continuous for hours and never extended below the umbilicus. Massive hematemesis occurred. X-ray evidence of ulcer was absent, both with respect to the usual sites and the diverticulum.

At operation exposure of the diverticulum was effected by going through the transverse mesocolon to the right of the middle colic artery. The head of the pancreas was exposed and the superior mesenteric vessels retracted medially, exposing the third portion of the duodenum. This was rolled upward exposing the diverticulum on the postero-superior surface. Blood vessels and adhesions to the diverticulum were divided and the duodenum rolled back into position and the diverticulum delivered between the mesenteric border of the duodenum and



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the pancreas. The diverticulum was removed and the defect invaginated by a Parker-Kerr stitch.

On the 12th post-operative day local abscess developed in the operative field. The patient was re-opened and the abscess drained. The subsequent course was uneventful.

Emphasis was placed upon the following points of technic: 1. Access to the third portion of the duodenum is best obtained by going through the transverse mesocolon. 2. Mobilization of the duodenum is essential. The diverticulum is usually on the postero-superior surface of the duodenum in the line of the mesentery. 3. Identification of the sac may be difficult and trans-duodenal exploration may be necessary. 4. Drainage is probably indicated. (This reviewer recalls that air injected by a Levine tube may aid in demonstrating the sac.)—*T.P.B.*

* * *

The Baby's Diaper

The Baby's Diaper with Suggestions for its Improvement. By Charles F. McKhann and George Bricmont, *Jnl. Ped.*, 34:2 131-138, Feb., 1949.

From considerations of the personal health of the infant, rather than the dictates of environmental sanitation of infant fashions, the best diaper would probably be none at all. This is not uncommon in many parts of the world.

The wet and soiled diaper causes maceration of the skin, intertrigo, ammoniacal dermatitis, and, in females, cystitis or pyelitis. (Helmholz believes most of these infections are of the ascending type.)

The present diaper allows urine and a variable amount of feces to be spread over the bassinet sheet. This makes it most difficult to avoid cross infection in nurseries. Much care and cleanliness in a food formula laboratory may be lost at the infant's bedside.

As a solution to the present unsatisfactory diapering, the authors suggest a diaper envelope which is constructed to hold a pad which is extra thick in the front end. When properly inserted, the pad fits smoothly into the waterproof material covering both ends of the pad, keeping them out of contact with the baby, leaving only a small section in the middle of the pad directly exposed to the excretions. The arc action of the pad holds this section of the pad away from the baby. The insert can be removed by grasping the ends of the diaper garment and applying pressure in the middle with the thumbs. The folded pad will fall out.—*D.R.D.*

Veterans Administration Admissions

Approximately 53,000 ex-servicemen and women were admitted to Veterans Administration hospitals

and hospitals under contract to the VA during August, a record high for any one month, according to a recent VA report. Previously, the highest number of admissions was 51,000 during March of this year.

Although neuropsychiatric patients comprise more than half of the VA hospital patient population, because of the extended treatment required, veterans classified as general medical and surgical patients far outnumbered the admissions in the neuropsychiatric and tuberculous categories. Approximately 46,000 of the admissions were in the general medical and surgical classification.

Now under construction or contract are 39 additional VA hospitals with a total bed capacity of 17,012. Eight additions to existing hospitals are also being built to add another 1,689 beds. Twenty-three other hospitals and three additions are in the planning stage.

Residencies in Topeka

From a number of sources it has been announced recently that the Topeka State Hospital has been approved for residency training in psychiatry. This statement is in error. Efforts are being made to set up standards at this hospital which will ultimately meet approval not only for training in psychiatry but in general surgical and medical residencies as well. That program, however, is not less than five or six years away.

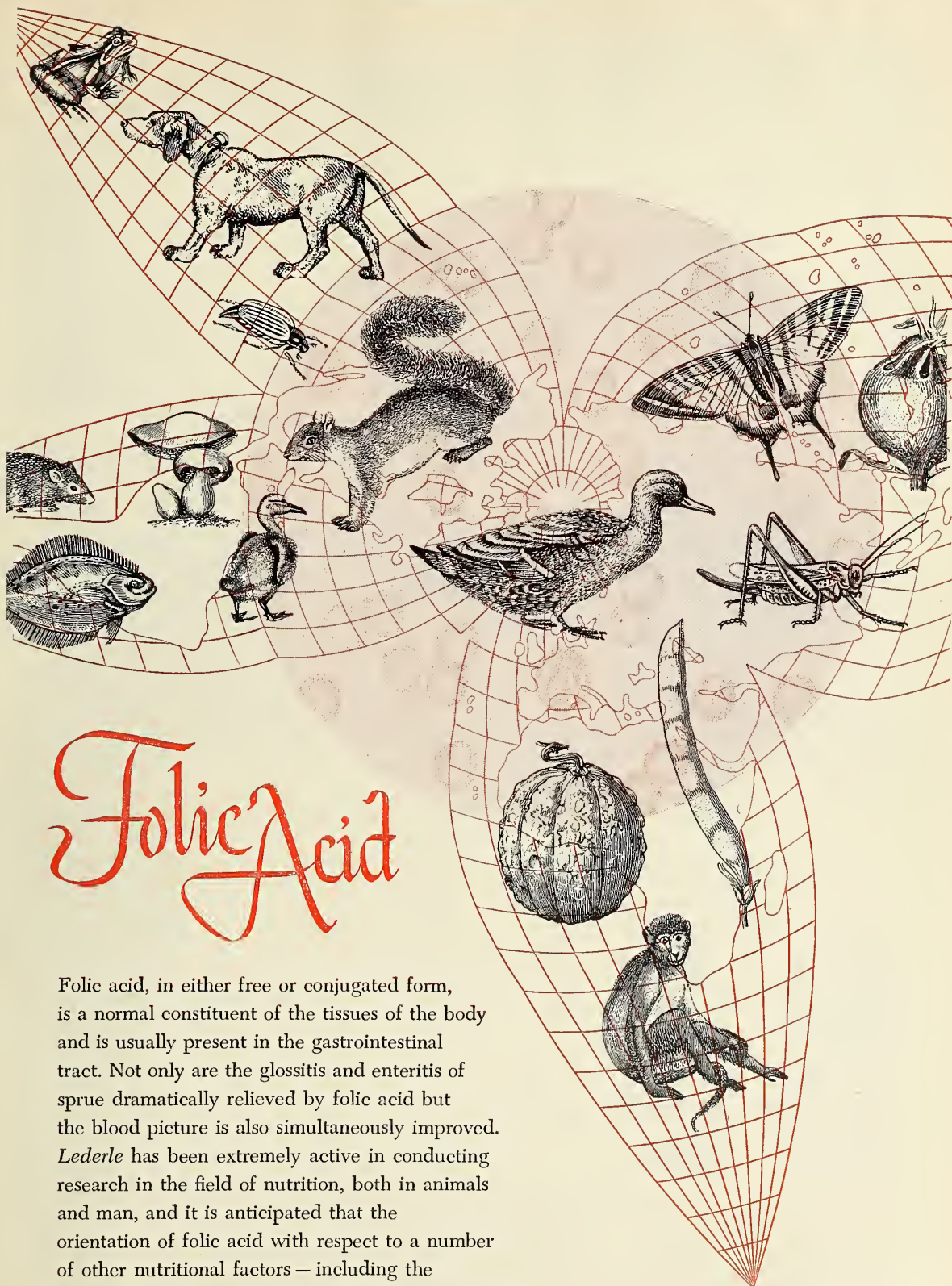
For the present an agreement between the state hospital and the Menninger School of Psychiatry, which latter is approved for the training of psychiatric residents, has been made whereby residents at the Menninger institution may do part of their work under supervision at the state hospital.

Inventory of Nurses Available

A complete inventory of registered professional nurses in the United States and its territories is now being released by the American Nurses' Association, according to Pearl McIver, president. It provides data on number and location, age, marital status, responsibility for dependents, whether the nurse is actively engaged in nursing and the field of employment and position, type of preparation and experience in special fields. The census will be maintained on a current basis, according to plans.

Copies may be secured from the American Nurses' Association, 1790 Broadway, New York 19, New York, at \$1.00 per copy.

91st Annual Meeting, Kansas Medical Society, Wichita, Kansas, May 15-18, 1950.



Folic Acid

Folic acid, in either free or conjugated form, is a normal constituent of the tissues of the body and is usually present in the gastrointestinal tract. Not only are the glossitis and enteritis of sprue dramatically relieved by folic acid but the blood picture is also simultaneously improved. *Lederle* has been extremely active in conducting research in the field of nutrition, both in animals and man, and it is anticipated that the orientation of folic acid with respect to a number of other nutritional factors — including the anti-pernicious anemia factor and the animal protein factor — will soon be made clear.

BOOK REVIEWS

How to Become a Doctor. By George R. Moon, A.B., M.A., Examiner and Recorder, University of Illinois College of Medicine. Published by the Blakiston Company, Philadelphia. 131 pages. Price \$2.00.

This is a very valuable book for a young man or young woman to read if they think they wish to study medicine. The major portion of the book deals exclusively with medicine but it also includes information about allied professions such as nursing, dentistry, pharmacy, medical technicians, occupational and physical therapy, and hospital administration and then drifts over for a word about veterinary medicine, osteopathy and optometry.

The would-be doctor, however, will find in this one book the answers to nearly all of the general questions he may have in regard to applying for admission to the various schools of medicine. Mr. Moon has gathered his information and facts carefully. The reviewer believes, however, that one sentence should have been printed in bold face. "To get into any medical school, one needs a good scholastic record but to get into a state university medical school he must have an excellent record." The author points out that there are many more applicants than can possibly be admitted to the schools of medicine and states that many of these young people will have to be satisfied with some other profession for their life-work.—H. W.

* * *

Current Therapy, By Howard F. Conn, M.D., and over 200 associates. Published by W. B. Saunders Company, Philadelphia. 672 pages. Price \$10.

This book really is named *Current Therapy 1949* and adequately and entertainingly presents, as these words of its title state "Latest Approved Methods of Treatment for the Practicing Physician." One or more brief reviews of the latest therapy procedure for 272 diseases are given; in certain controversial subjects as many as three contributors give separately their favorite methods. And these contributors are among the most outstanding authorities on their particular disease assignment.

Too frequently one consults a treatment text book to find some old statement present which has been copied from year to year from previous text books. In "*Current Therapy*" one opens the page to his disease topic and finds there an excellent brief summary of the 1949 approved method of treatment.

There are literally hundreds of prescriptions, diets, mixtures and delineated routines of proven clinical usage. This book is a *must* for every practicing physician.—E.H.H.

A Textbook of Surgery. Edited by Frederick Christopher. Published by W. B. Saunders Company, Philadelphia. 1550 pages, 1465 illustrations. Price \$12.

Dr. Christopher has brought his book up to date in this fifth edition. Twenty-nine sections are entirely new and other sections have been revised. Each section has been written in a concise manner with emphasis upon the essential features of each subject. The thoroughness of the presentation of the newer features of thoracic surgery and surgery of the cardiovascular system is commendable. Wound healing, shock, acidosis and alkalosis, water and electrolyte balance, bacteriology and chemotherapy, subjects which are so important in modern surgical therapy, are ably presented. Illustrations are numerous and of good quality.

Dr. Christopher has not only maintained the standard of his previous editions, but has definitely improved the quality of his book in this new edition. It can be recommended with enthusiasm as a text and reference book. Every surgeon should have it in his library.—T.G.O.

* * *

Diagnosis and Treatment of Brain Tumors and Care of the Neurosurgical Patient. By Ernest Sachs, C. V. Mosby Company, St. Louis. 537 pages, 348 illustrations. Price \$15.00.

This book is a combination of two books previously written by Dr. Sachs, both of which have been partially revised and brought up to date. It includes surgical anatomy, physiology, pathology, and methods of examination and diagnosis useful to students and doctors, and details of operative technique that neurosurgeons will find interesting. Its section on post-operative care will be found particularly helpful to house officers and nurses. The text makes easy reading, the illustrations are profuse and beautifully done, and the clarity and emphasis of the book is enhanced by numerous detailed case reports of sample cases from Doctor Sachs' own tremendous neurosurgical experience.

This book is a presentation of Dr. Sachs' own personal opinions and experiences, and at times he appears dogmatic in defending them. He dwells at great length on unnecessary details as to exactly how his own operating room, dressing tray, and surgical instruments are set up, and not enough on more important recent developments, such as arteriography. In the section on anesthesia, pentothal is not even mentioned.

On the whole, the book is well presented, is interesting, informative and readily deserves its place in every medical library.—W.P.W.

* * *

Normal Values in Clinical Medicine. By Sunder-

	Calories	Protein Gm.	Calcium Gm.	Copper mg.	Iron mg.	Phosphorus Gm.	Vitamin A I. U.	Thiamine mg.	Riboflavin mg.	Niacin mg.	Ascorbic Acid mg.	Vitamin D I. U.
National Research Council Allowances, Sedentary Man (154 lbs.)	2,400	70	10	1.2	12	1.5	5,000	1.2	1.8	12	75	Small Amount
Ovaltine in Milk, 3 Servings*	676	32	1.12	0.5	12	0.94	3,000	1.16	2.0	6.8	30	417
Percentages of N. R. C. Allowances Provided by 3 Servings* of Ovaltine in Milk	28%	46%	112%	42%	100%	63%	60%	97%	111%	57%	40%	Abun- dant

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man and Boerner. Published by W. B. Saunders Company, Philadelphia. 845 pages, 650 illustrations and tables. Price \$14.00.

The authors have assembled an astounding amount of material relative to normal values in clinical medicine. The book encompasses not only the laboratory fields for which the authors are noted, but also the allied fields of physical diagnosis, physical medicine, anatomy, physiology, and medical statistics.

It is an innovation in the field of medical literature which will have inestimable value as a reference book on the variation of normal values.—L.H.L.

* * *

Operations of General Surgery. Second Edition. By Thomas G. Orr, M.D. Published by W. B. Saunders Company, Philadelphia. 890 pages, 1700 illustrations on 721 figures. Price \$13.50.

This informative book serves an unusually useful purpose to general surgeons in all stages of endeavor who will find themselves repeatedly referring to it for its practical presentation of procedures, new and old, in all facets of general surgery. This information is presented clearly and concisely with adequate description and detailed illustration of technic. Many alternative procedures for each technic are included with their indications for use, as well as their dangers and safeguards.

The second edition has been tuned to the pace-making strides of general surgery, incorporating not only the modern advances in cardiac, pulmonary, and vascular surgery, but also the newer modifications of established surgical procedures.

The reader will find up-to-date concepts of surgical diseases presented in a brief and to-the-point manner, making for intelligent application of surgical procedures. Fundamental and basic surgical principles, including even the simple opening and closing of surgical incisions, have been enlarged upon in the second edition. Real contributions to the surgeon's armamentarium are presented in almost every field of surgery, general or special, representative of the wide experience of the author.

This book in the library of the surgeon and the hospital is unique in its day-to-day usefulness and in the presentation of the essentials of surgical technic directed both to the beginner in surgery and the general surgeon as well.—S.R.F.

* * *

Life Among the Doctors. By Paul de Kruif. Published by Harcourt, Brace and Company, New York. 470 pages. Price \$4.75.

Paul de Kruif has been regarded, not without reason, as being the stormy petrel of American medical writing. Trained as a bacteriologist and well known for important contributions in the field of

bacteriology, De Kruif left the research laboratories; and the stir that his native talent, his flair for the dramatic, and an occasional lack of objectivity have caused, are well known to all, particularly the medical profession.

De Kruif's latest work, and one which he would appear to regard as his most important to date, is in a sense autobiographical, for in it he relates his personal experiences and contacts with some of the controversial and important figures in recent American medicine.

The style is De Kruif at his most readable and most dramatic. The fact that the figures about whom he writes were and are controversial, plus the fervor of his interest in the underdog, combine to make for a passionate statement of principle regarding medical practice and advances in medical knowledge. Organized medicine, as might be expected, comes under severe criticism from time to time. The reviewer does not know the facts in many instances which De Kruif describes and thus cannot comment on the objectivity of this volume. However, it would seem clear that in many instances the author has real reason for his attacks but that in other instances he tends to overstate the situation.

Regardless of the reader's point of view, however, the book is readable and is recommended as entertaining. It is also quite probable that many physicians could read this book with profit, particularly as it reflects the well-known reluctance on the part of the medical profession to modify the status quo.

It is interesting in passing to note that quite recently De Kruif has come out vigorously as opposed to compulsory health insurance and the reviewer feels that the author may actually serve a useful purpose in this volume by stimulating the medical profession to examine itself in the light of the profession's attitudes over the past ten years.—F.D.M.

* * *

Golden Jubilee World Tribute to Dr. Sidney V. Haas. Published by the Committee for the Golden Jubilee Tribute to Dr. Sidney V. Haas, New York. 38 pages.

This is a short monograph, with testimonials from leaders in the field of pediatrics, on the occasion of the completion of Dr. Haas' 50th year in medical practice. Dr. Haas is best known to the medical world for his introduction of banana treatment of celiac disease.—F.D.M.

* * *

Archivum Chirurgicum Neerlandicum (Dutch Archives of Surgery). Published by Oxford University Press, New York. Price \$8.50 per year.

The Dutch Archives of Surgery is a new quarterly periodical devoted to general surgery. It is the offi-

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cial organ of the Dutch College for the Advancement of Surgical Science and its constituent bodies. Although published in Arnhem, Netherlands, it is printed in English. Its proposed aim is the presentation of new advances in the various fields of surgery.

The first volume contains original articles on pericardiectomy, the surgical treatment of esophageal carcinoma, retropubic prostatectomy, enterococcal peritonitis, pneumonectomy for Boeck's sarcoid, the surgical excision of an aortic aneurysm following resection for aortic coarctation, the operative treatment of severe kyphosis due to Bechterew's disease, and the treatment of prostatic carcinoma by androgens. The format is pleasing; it is printed on fine quality art paper, and the illustrations are abundant and well-reproduced.

The journal is a must for all medical and surgical departmental libraries. It will prove of interest to those who keep abreast of current results, new techniques, and descriptive articles in surgery. It will serve as a stimulus to all surgeons and should assist substantially in the international propagation of medical knowledge.—C.F.K.

* * *

Trends in Medical Education. The New York Academy of Medicine, Institute of Medical Education, 1947. Published by the Commonwealth Fund, New York. 320 pages. Price \$3.00.

This is a collection of talks by various educators, including those in secondary schools and colleges as well as in medical schools. The essays express many different points of view. No attempt is made to arrive at any basic plan of action in any one field of medical education, but rather to survey all opinions. The book is valuable for those who want to find out both sides of the argument. The turmoil through which medical education today is going is well presented and comprehensively covered. The reader will have to separate the chaff from the wheat for himself.—H.C.M.

* * *

Excessive Use of Vitamin D₂

Excessive amounts of vitamin D₂ (irradiated ergosterol) may cause abnormal calcium deposits in organs and tissues and abnormal porousness of bones, three Boston doctors informed the 50th annual meeting of the American Roentgen Ray Society in Cincinnati in October.

The report of toxic effects was made by Drs. William R. Christensen, Charles Liebman and Merrill C. Sosman. The "bizarre yet apparently specific lesions which occur" are revealed by x-ray, they said. The disorder is termed medically as hypervitaminosis D.

They cited several cases showing unusual skeletal

and joint manifestations of the disease. These, they added, are believed to be of diagnostic significance.

The symptoms include nausea, urinary frequency, thirst, diarrhea, gastrointestinal pain and vomiting. Kidney damage and hardening of tissue by the deposit of calcium are results. Deaths have been reported.

The number of factors which may affect the potency of a given dosage are surprisingly high, the report said. These include the duration of administration, the manner of administration and the source of vitamin D.

"There are several vitamins D, all closely related chemically and each having definite antirachitic (preventive and curative of rickets) activity," the doctors reported. "The most important are D₂ and D₃. Vitamin D₃ is the naturally occurring product found in fish liver oils; D₂ is essentially a synthetic product.

"With unusually few exceptions the reported cases of hypervitaminosis D have clearly occurred as a result of treatment with vitamin D₂. A major part of this observed incidence is probably due to the fact this product is available in high concentration and has been the one commonly used for obtaining high dosage."

They said that although toxic effects occur with both vitamins, experiments on rats and other animals showed that the effect of vitamin D₂ was more pronounced than that of D₃.

Grants for Water Pollution Study

Federal grants totalling \$850,000 to study water pollution resulting from industrial waste were announced recently by the Federal Security Agency. Kansas was scheduled to receive \$13,697, and the Kansas State Board of Health was listed as the agency officially designated to conduct the study.

Before funds may actually be released for study of industrial waste problems, applications setting forth specific programs must be approved by the Public Health Service.

Important messages are presented in the advertisements in the Journal each month. New products are announced from time to time and information is presented regarding the use of products featured. Other types of ads emphasize services rendered and commodities offered that may be used in any physician's practice, his office, or his home. Readers can rely on the statements and facts presented as only ethical advertisements are included. Please tell the advertisers that you saw their ads in the Journal of the Kansas Medical Society.

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Esophageal Surgery, One Week, starting June 5.
Breast & Thyroid Surgery, One Week, starting June 26.
Thoracic Surgery, One Week, starting June 12.
Gallbladder Surgery, Ten Hours, starting June 19.
Fractures & Traumatic Surgery, Two Weeks, starting April 17.

GYNECOLOGY—Intensive Course, Two Weeks, starting February 20.
Vaginal Approach to Pelvic Surgery, One Week, starting March 6.

OBSTETRICS—Intensive Course, Two Weeks, starting March 6.

PEDIATRICS—Intensive Course, Two Weeks, starting April 3.

MEDICINE—Intensive General Course, Two Weeks, starting April 24.
Gastroscopy, Two Weeks, starting March 6.

DERMATOLOGY—Formal Course, Two Weeks, starting May 8. Informal Clinical Course every two weeks.

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Army to Conserve Medical Skills

A newly-adopted Army plan will result in greater economy in the use of scarce professional personnel in military hospitals in theaters of operations, according to an announcement by Major General R. W. Bliss, the Army Surgeon General.

"Under this plan," said General Bliss, "fewer physicians or dentists will be ordered to active duty with Army medical units until those units are ready to move into a theater of operations. This should allow each doctor to remain in active practice in his community until the Army has an actual need for his services with troops in combat."

The new plan is the result of an intensive study of experiences of the Army Medical Department during World War II. At that time doctors were required to join units while medical technicians and administrative personnel were being trained in the setting up, operating, and dismantling of mobile field medical equipment. This resulted in a loss of skilled professional manpower, not only to the Army, but to the doctor's civilian community as well.

Hospital personnel will now be divided into two groups—administrative and professional personnel. The professional group will be known as the "professional complement," and will be made up of physicians, dentists, nurses, and other specialists.

They will not be required to join the unit until such time as the unit is engaged in the actual care of patients. Further, when the requirement for this group has ceased, they may be moved to another theater of operations, or to another area within a theater where their professional services will be put to use with a minimum of delay. The administrative group would remain to oversee the moving of equipment and records of the unit. In this way maximum use may be made of the professional complement's services.

Rural Health Conference in Kansas City

The Committee on Rural Health of the American Medical Association will hold its fifth annual conference in Kansas City, Missouri, February 3 and 4, 1950. Chairmen of the state rural health committees will meet February 2. Attending the conference will be physicians, farm organization leaders, agricultural educators, farm editors and others concerned with rural health problems.

Five topics will be introduced for discussion, rural medical facilities at the local level, relation of agricultural extension service to rural health problems, community responsibility for health service in rural areas, methods of prepayment for health services in rural areas, and the responsibility of the medical schools in the rural health program.

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